

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

GLEANINGS

IN BEE CULTURE

CONTENTS

MARKET QUOTATIONS.....	731
STRAWS, by Dr. Miller.....	739
PICKINGS, by Stenog.....	740
CONVERSATIONS WITH DOOLITTLE.....	741
EDITORIALS	742
No 'rip Cleats too Thin.....	742
Unusual Amount of Sweet Clover.....	743
Selling Unripe Honey.....	743
Death of H. C. Morehouse.....	743
Mating Queens in Miniature Nuclei.....	743
How to Ship Bees.....	744
N. E. France, General Manager of N. B. K. A.	746
GENERAL CORRESPONDENCE	748
Planting for Honey.....	752
The Question of the Second Mating of queens.....	754
A Retrospective Glance.....	755
HEADS OF GRAIN	757
Cutting up Candied Honey.....	757
Hiving back Swarms by Shaking.....	758
Another Tub for Uncapping.....	759
Brood-frames with Thinner Top bars.....	759
Discouraging for Canada.....	759
Making Swarms destroy Cells.....	760
When to make Brushed Swarms.....	760
In favor of Thin Top-bars.....	760
Alfalfa in Cuba.....	760
Bee-escape for Strengthening Swarms.....	761
A Fine Queen Trade broken up by Foul Brood.....	761
Milk Paint Alabastine not Suitable.....	762
Working Colonies for Comb and Ex. Honey.....	763
A Swarm that won't stay Hived.....	763
Pickled Brood; its cause.....	763
Large or small Colonies.....	763
OUR HOMES.....	764
SPECIAL NOTICES.....	775

THE A. I.
MEDINA



Root Co.
OHIO

Western Edition.

ENTERED AT THE POSTOFFICE, AT MEDINA, OHIO, AS SECOND-CLASS MATTER.

Western Bee-keepers.

Chicago has shipping facilities second to none. This insures the lowest freight and express rates. We carry a complete stock of supplies at our Chicago branch. Twelve carloads have been used here THIS YEAR. Save freight and time. Prompt shipments.

Railroads and their Express Co's entering Chicago.

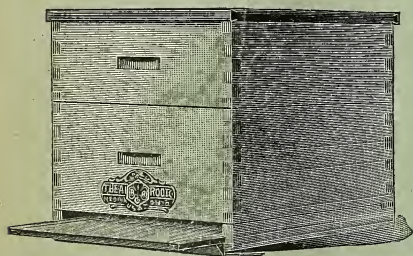
Railroads.

Atchison, Topeka & Santa Fe,
Baltimore & Ohio, -
Chicago & Alton,
Chicago, Burlington & Quincy,
Chicago & Great Western,
Chicago, Indianapolis & Louisville,
Chicago, Milwaukee & St. Paul,
Chicago & Northwestern,
Chicago, Rock Island & Pacific,
Chicago & Eastern Illinois,
Chicago & Erie,
Chicago & Western Indiana,
Cleveland, Cincinnati, Chicago & St. Louis,
Grand Trunk Railway System,

Illinois Central,
Lake Shore & Michigan Southern,
Michigan Central,
New York, Chicago & St. Louis,
Pennsylvania,
Wabash,
Wisconsin Central.
Numerous boat lines.

Express Companies.

Adams Express,
American Express,
National Express.
Pacific Express,
United States Express,
Wells-Fargo Express,

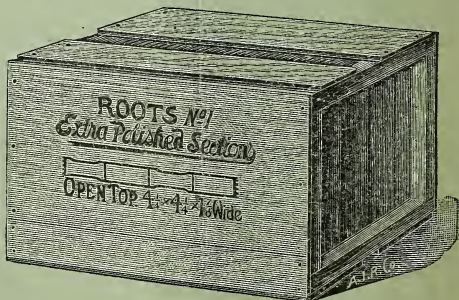


Sections.

Be ready for the honey flow. Delay means loss. To order supplies 60 days before needed is the safest rule to follow. We carry a large supply of sections and make prompt shipments. Don't wait until to-morrow. Price list FREE.

Danzenbaker Hive.

This is the hive that has made such exceptional records at wintering. Not only does it excel in this, but, as a honey-producer, it has become famous. Send for our catalog and a copy of "Facts About Bees, FREE.



The A. I. ROOT Company,

144 East Erie St., CHICAGO, ILL.

GLEANINGS IN BEE CULTURE

A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS.

ILLUSTRATED SEMI-MONTHLY

Published by THE A. I. ROOT CO.
\$1.00 PER YEAR MEDINA, OHIO.

Vol. XXXII.

AUG. 1, 1904.

No. 15



SWEET- CLOVER pollen, quite unlike that of white clover, is of a rather dull yellow color.

THANKS, friend Womble, for additional testimony that alfalfa yields in the East, page 705. But please explain why you say, "The only trouble I had was in getting rid of it."

THAT CUT of Mack's swarm-catcher, page 706, should have a board cover instead of a wire one. [But the engraving had already been made before I noticed that our correspondent specified a board.—Ed.]

BRO. DOOLITTLE, p. 690, urges again the value of pollen. Keep it up, Bro. D., for a good many look upon pollen as so much dead waste. I formerly thought a pound of pollen was worth as much as a pound of honey. I'm inclined to think now that it's worth a little more.

WHEN MR. HOOPER showed he was an expert by "the way in which he picked up the frames, handled the smoker," etc., p. 694, did you note, Mr. Editor, whether his thumb or his fingers came next the fire-box of the smoker? [He handles it both ways; and, to be frank, I find myself using both ways.—Ed.]

MIGRATORY BEE-KEEPING on a large scale seems contemplated in Belgium, by rail, a special train running for that purpose if a minimum of 16 cars are ordered, starting at 4 in the morning, stopping only to take on cars of bees at stations along the route, and making the trip in about six hours. [We shall be glad to have you give us the result of the experiment.—Ed.]

REGARDING the point raised by F. N. Somerford, page 704, the testimony is that a

queen mates upon the wing, and without some very strong proof to the contrary it can hardly be believed that she mates in any other way. I don't know, but I believe it is a physical impossibility for a queen to mate in the hive, hence an impossibility for a queen to mate after she is clipped.

LOOK HERE—isn't this thing of inventing new bee diseases being carried a little too far? First we had foul brood alone. Then came the "nameless disease" which was afterward "named" paralysis; and now we have black and pickled brood, and those Utah fellows are getting ready to take out a copyright on something else. Better stop soon. [May be it is not a new disease. Perhaps later developments will throw some light on the subject.—Ed.]

RIGHT, Mr. Editor; let discussion as to manufactured comb honey come well to the front at St. Louis, and let the reporters try to pick out two sections just exactly alike. [Yes, let us offer to give them \$500 or even \$1000 if they can find two sections that are exactly alike in filling and capping. Of course, if comb honey were manufactured there would be a lot of combs that would have the same imprint, the same pop-holes, the same regular capping, and every thing else the same.—Ed.]

STENOG, p. 689, speaks of the good work of the *American Bee Journal* in convention reports, and of GLEANINGS leaving that field free. What a blessing that is will be appreciated by those who are familiar with European bee-journals. After one of the big conventions, different journals will have page after page of the same thing reported, and some of the little fellows will tag along after, copying from the others. Then, too, there is a big difference in the time of getting out the reports. Mr. York will rush through a long stenographic report in a very few numbers, while foreign reports will string along for a year—sometimes longer!

SAFFORD's extracting-frame, according to my experience, is worth while. I tried the simple frame advised by the editor, but it

was too much trouble to keep the sections from tumbling out. Took too much time. There's a mix-up in the last sentence of the footnote: "I see our artist has made your frame hold six sections instead of four. The former would not go in an ordinary standard extractor." You can straighten that up to suit yourself, Mr. Editor, but in any case will not eight sections take about the same room as an ordinary extracting-frame? [We shall be glad to get your testimony, doctor. Yes, it was my mistake. The cut was all right, after all.—ED.]

FASTENING foundation in brood frames by the wedge-and-groove method works so beautifully here that it seems to me if I were you, Bro. Morehouse, I'd try baking all the shrink out of the wedges in Colorado. P. 692. [A queer world this. There are some people who do not make the wedge-and-groove plan work, and they have not a dry climate either; and there are still others who will not have any thing else. Very often our subscribers wonder why we do not make supplies to suit their particular notions. One will say, "If you make such an article so and so, it will be all right." But that man's idea of the thing would be all wrong with another.—ED.]

MORE AND MORE American methods of bee-keeping are gaining recognition in European countries. They poke fun at us as given to faking, but all the same I notice that it is becoming quite the fashion to have items copied from American journals, some of them at second and third hand. *L'Apiculture*, the oldest of the French bee-journals, now in its 48th year, which formerly ignored American journals, now quotes freely from them, and has secured as a regular correspondent none other than our good friend C. P. Dadant. The whirligig of time brings strange revolutions. Formerly *L'Apiculture* fought bitterly the teachings of the elder Dadant: now it seeks the teachings of the son. [See article elsewhere on this subject in this issue.—ED.]

FRIEND A. I., I enjoyed reading your Home talk, p. 611, and heartily endorse all you say except when speaking of your wife you say: "Of course, that word 'adore' does not quite fit at our stage of life." I feel very sure it does. One meaning of "adore" is "to render divine honors to," and in that sense it does not fit at your stage of life, nor at any other stage. Another meaning is to "feel or exhibit profound regard or affection for;" and if it doesn't fit in that sense, then I want to cut your acquaintance. You needn't apologize in person; a printed apology will answer. [My dear old friend, I do not know but I shall have to acknowledge to you that I think just as you do; but it did not seem quite proper that I should say it right out before the great wide world. And another thing, Christ Jesus should always come first, even before the wives God has given us. I feel sure you will agree with me in this.—A. I. R.]

AT ONE END of the line stand those who say that it is best to leave superseding of queens entirely to the bees; at the other end stands that Rocky Mountain chap, saying, "If a queen dares to live more than a year, kill her." Of the two extremes I think the first would be the safer in this locality. But I'd rather stand in the middle of the line. Generally, the bees in this region will supersede a queen as soon as any superseding is needed. Whenever a queen is not doing good work, her head should come off, whether she is more or less than a year old. I wonder if there isn't something about the climate that makes queens play out quicker in Colorado. I fancy Bro. Morehouse flinging back at me something like this: "Generally, in this region a queen does her best work in her first year; and if you should take off her head when she shows failure the following spring you'd interfere seriously with building up for the harvest." And I don't know of any good reply to make.

MR. ETHICS shut himself up, did some hard thinking, and concluded that no bee-keeper has any right of any sort to the territory he occupies, page 595. If Mr. Ethics will shut himself up again, and do a little harder thinking, he may conclude that he has taken a very superficial view of the case. He thinks that the men who own the land "have the same moral right to keep bees for the production of honey that they have to keep cows for the production of butter and cheese." The man who produces butter owns the feed he gives his cows; if I should take any of that feed he could have me punished for theft. Does he own the nectar produced on his land? If I, through my bees, should appropriate that nectar, could he have me arrested for theft? Years ago I was foolhardy enough to say that there should be laws protecting a bee-keeper in his rights to a given territory. Prof. Cook was my strongest opponent, but he said it might as well be understood first as last that the man who owned the land didn't own the nectar on it. You haven't yet taken in the whole case, Mr. Ethics.



DEUTSCHE IMKER AUS BOHMEN.

The present status of bee stings for the cure of rheumatism, or at least the alleviation of that terrible scourge of the human race, is receiving much attention in Europe. The following in regard to the matter appeared lately in the German periodical I am quoting, from the pen of Dr.

J. Langer, of Prague, Bohemia. At first I thought I would not translate it; but the communication from Mr. Rich, in this issue, caused me to change my mind. Then I could not find the journal; but, fortunately, I found a translation of it in *L'Abeille* (The Bee), one of the best French bee-journals published, although it does not come from France. As the matter will not suffer by being run through a French colander I give it here as I find it. Each reader can draw his own conclusion as well as his own stings after he has received them; but it seems to be certain that the time has passed by when the use of stings for rheumatism can be regarded as entirely a fad or a piece of superstition.

The belief that the sting of the bee may exercise a salutary influence on rheumatic pains is very widely spread among bee-keepers, and dates back from early times. Berlepsch mentions very briefly this fact in his manual, and declares that it is very easy to believe and easy to explain.

Since my researches on the poison of bees were made known, a number of bee-keepers and doctors have questioned me concerning my opinion as to the influence of stings in rheumatism. Having made no personal experiments on this subject I have been in the habit of replying that, very likely, the matter contained in bee-poison operates on the patient like applications of blisters made by cantharides.

Dr. Terc, a physician at Marburg, made a number of personal applications in this way. As early as 1888 he had applied about 30,000 stings of bees to 173 persons, and he made note of the remarkable coincidences between the application of the remedy and the relief of rheumatism. In 1903 he presented the result of some new observations to the Royal and Imperial Society at Vienna. As his report is not yet printed, the author has confided to me his manuscript. It is a summing-up of the cases already noted—experiments made on more than 500 persons. Being a bee-keeper and a doctor, I believe it is my duty to give the result of this interesting work to the bee keeping world.

The results obtained by this doctor cause him to speak with enthusiasm on the use of bee-stings as a cure for rheumatism. He is persuaded that all articular rheumatism, chronic or not, is curable by the poison of the bee; and the disease is healed more rapidly if the cure is applied early. It should be noted that each case presents characteristics peculiar to itself. The doctor is under the impression that these stings have also a very salutary influence in the cure of acute rheumatism. He was impressed by the fact that none of the 30 patients attacked by that kind of rheumatism was afflicted with heart trouble. Stings have even been efficacious in cases of muscular rheumatism and facial neuralgia. The effect of the poison is local or general. The latter renders the sufferer immune, and thus leads to a cure. It is slower than other remedies—for example, salicylic acid, but it surpasses them in its effect. The doctor and the patient should have patience and confidence. This remedy should be kept from children and old people, those who show a complication of troubles such as a lack of blood, tuberculosis, inflammation of the kidneys, or fever. However, in the case of the latter as soon as the fever has disappeared one may apply the cure in question to the patient. Dr. Terc has seen no danger except in a case of weakness of the heart; and he is disposed to believe that serious troubles with the circulatory apparatus are present when several applications of stings produce general troubles. When from time to time we read of the death of a man, occasioned by a single sting, we may rest assured that his days and perhaps his hours were numbered, and that he would have succumbed soon without any accident.

The method of application is very simple. The bee is seized between the thumb and first finger. It is made to sting on the spot chosen, and is killed by squeezing it. The sting remains in the wound, or at least is not removed until the automatic movements of that organ have entirely ceased. Dr. Terc begins his cure by applying one or sometimes three stings, applied at the extremities or on the back. According to the reactions produced he increases the number more or less. He has applied as many as 150 in a day;

but in general he advises that not more than 100 be used. The treatment extends through one, two, or even three years.

After beginning, he causes the patient to make careful observations for three days, after which he can with certainty predict the cure of the patient, otherwise he dissuades him from continuing further. The pain of the cure is woeful and progressive, and it needs a certain degree of heroism to go to the end. On this account it will be readily understood that the methods used by Dr. Terc become popular very slowly; nevertheless they never disappoint one who perseveres in them. It is self-evident that the sting cure does not do away with the changing operations in the body of the patient, such as atrophy and the degeneration of tissue.

Perhaps we shall be able some day to make a serum from animals rendered immune to the stings of bees; then it will be possible to apply that remedy in a way less painful to the human body.

"I hail with pleasure," says Dr. Terc, "every improvement in the method I have indicated. As for me, I am fully resolved on the task I imposed on myself 23 years ago."



SOURD HONEY.

"Say, Doolittle, I am in a 'peck of half-bushels' this morning, as the old lady said."

"What is the trouble to-day, Brown?"

"You know I had my honey all piled up nicely in the parlor of the house. Wife took up the carpet last spring on account of the carpet-bugs getting into the carpet, and she told me I could put our section honey in that room this year to save lugging it upstairs. I thought this would be quite a scheme, and last night I found, after I had taken off two tiers of the sections in crating the honey yesterday that the sections further in the pile had a watery appearance, while those near the floor at the bottom smelled quite sour; and some I had taken off before all the cells were sealed had actually run out on the floor, and was so sour and thin that I was almost scared. Can you help me any?"

"In the first place, sections having many unsealed cells should have been allowed to stay on the hive till all the cells were sealed; for unsealed honey should not be put on the market to the injury of the sale of good honey. Where honey is left on the hive till fully ripened and sealed over, it is not as liable to sour as that which is unsealed is."

"I thought possibly this was a cause of part of my trouble, and you can rest assured I shall never do it again."

"I hope not. But there is a possibility that there might have been some other trouble with the honey, for I have noticed that certain kinds of honey, like apple-bloom and dandelion, will not ripen up in the same room in which clover and basswood honey will do fairly well. Then in certain seasons the bees will seal up honey very

much more unripe and thin than they will in other seasons; and the more unripe honey is, even when capped over, the more liable it is to grow thinner, and sour in a room in which thoroughly ripe honey will keep quite well."

"That accounts for a part of it again, for it was my very early honey which was the worst."

"I judged that would be so. But all honey, if kept long enough in a cool damp room, will sour after a while, as it will absorb the moisture from the room where the same is cool and damp, like a lower room on the north side of a house with no draft of air through it."

"That hits me again, for our parlor is in the northwest corner of the house, over the cellar, and the blinds and all windows have been kept closed. And I thought that was just as good as upstairs, where I had always kept it before. I had to calk some of the cracks up there, they were so big I feared the bees would get in. I shall know better next year, you bet."

"How did you pile the honey, in the room?"

"Set it right down on the floor, of course. How would you pile it?"

"Not like that. I see you missed in your piling one very important point in this matter. No one should ever place nice section honey, nor any other, for that matter, on the floor of any room, no matter what the temperature, nor how thoroughly ventilated."

"Why not?"

"Let me give you a little of my experience. When I first began bee-keeping I used a room quite similar to what you say your parlor is, and did just as you did in putting the sections on the floor."

"Well, it seems that others have been caught the same as I. This is a little consolation, but it won't help the honey. Excuse my breaking in. I felt like it, that was all."

"When I came to crating that honey I found that the honey in the sections next the wall and floor to the room had soured—not only that in any unsealed cells next to the wood that chanced to have honey in them, but that the honey was bursting from the sealed cells, while that next the outside of the pile, and higher up in the room, and out from the wall, had not grown thin or watery at all. I took the hint at once, and the very next year found me with a temporary platform fixed in a room on the sunny side of the house, and screens over the windows, the windows being left open fair days. This platform was made of slats of sufficient strength to hold the honey, the same being spread apart enough so that the edges of the sections just caught on them, said platform being raised a foot from the floor. When another tier of sections was to go on top, strips were placed between, and so on clear to the top of the pile, and in this way there was no hindrance to the air from circulating all through the pile, and up along

the face of every section, on both sides, and also above and between each row of the same."

"Did this work?"

"Certainly it did; and I have never had any honey sour—no, not even the honey in any unsealed cells that might happen to be along the wood of the section."

"Well, that is worth knowing, and I am glad I could have this talk with you. But what can I do with my honey that is watery now?"

"If you will fix such a platform up in your upstairs room you used to store honey in previous to this year, and store the watery honey there for a few weeks, I think it will improve so as to be salable; but that which has soured can not be brought back very well again—not well enough to be salable at least, according to my experience. You can use it for early feeding of the bees next spring, if you desire; but I should not want to feed it this fall, for the bees might not winter well on it."

"Then you would not try to sell it?"

"No. I would extract the honey out of the combs this fall, allow the bees to clean up the combs by putting a whole superful over a strong colony, and, after cleaning, store the combs away till spring, when they can be used for bait sections next year. In this way it will not be an entire loss to you."

"Won't that which the bees get by cleaning the sections harm them?"

"I do not think so, as there will be very little honey left after extracting, as the honey will be so thin it will nearly all leave the comb."

"But suppose the bees should not have honey enough for winter. Is there no way I can use this honey for feeding?"

"You can scald it, or cook it until it is sufficiently thickened so as to be like other good honey, all but the flavor, when it might do for winter feeding. But I would go a little slow on it."



LET me urge again the very great importance of getting your comb honey to market as early as possible. Why it should sell better from August on till January than from January till August I can not say; but the honey-buyers and commission men know that this is a fact.

NO-DRIP CLEATS TOO THIN.

MR. R. A. BURNETT is reported in the *American Bee Journal* as saying that the

no-drip cleats in no-drip shipping-cases should not be less than $\frac{1}{4}$ inch thick. When only $\frac{1}{8}$ inch, the sections are not raised high enough to be out of the drip that may run out of the combs. Mr. Burnett is doubtless correct for Chicago and vicinity. In Colorado the bee-keepers want the strips no thicker than $\frac{1}{8}$ inch. We should be glad to get expressions from honey-buyers and commission men as well as bee-keepers.

AN UNUSUAL AMOUNT OF SWEET CLOVER.

THERE seems to be an unusual amount of sweet clover this season—so much of it that our bees have not annoyed us by robbing as they usually do at this season of the year. While, undoubtedly, a part of the honey comes from white clover that is not yet out of bloom, there is a good big portion of it that comes from sweet clover, because bees seem quite busy on it.

Sweet clover is not a noxious weed, because it grows where nothing else can thrive. It is spreading from one end of the country to the other; and I believe it is going to be a great help to the bee business, for it will keep down the robbing tendency, and at the same time give the bees sufficient stores to take care of their daily needs without drawing on the winter supply gathered in the height of the season.

NOTHING GAINED BY SELLING UNRIPE HONEY, AND MUCH TO LOSE.

THE *American Bee-keeper*, in indorsing a statement in an exchange, to the effect that unripe honey on the market has done much to injure the business, goes further and says there is no advantage gained in extracting before the honey ripens, because "ninety per cent of the total evaporation comes during the first night in the hive, and the further improvement is not so much a matter of evaporation as a matter of influence caused by the presence of the bees—an influence subtle, but positively known to every experienced apiarist, whereby the honey slowly but surely attains that degree of body and flavor that makes the consumer who samples it wish for more." I wish to indorse most heartily the sentiment that no bee-keeper should put out extracted honey until the same has been most thoroughly ripened. There are times when unsealed combs can be extracted without waiting for it to be capped over; but as a rule the average person had better wait until every inch of comb is completely capped.

THE UNTIMELY DEATH OF H. C. MOREHOUSE.

It is with very much regret that we are compelled to record the death of Mr. H. C. Morehouse, one of our editorial writers, July 24, at Boulder, Col., after a severe illness of only nine days. We had only recently engaged him to edit the department of Rocky Mountain Bee-keeping, and the two first installments which we have already

published certify to his excellent editorial ability. He had something over a thousand colonies. He was a man of ripe experience, and from our brief acquaintance with him we judge him to have been a most lovable man. GLEANINGS feels that it has suffered a severe loss in the death of so capable a writer; and although he had just begun his work, yet so excellent was the character of it that he could not help leaving his impress on the minds of our readers. He leaves a wife, and a boy two years old. We extend to the family our sincere sympathy.

MATING QUEENS IN MINIATURE NUCLEI AN APPARENT SUCCESS.

SEVERAL times the belief has been expressed in these columns by correspondents and even by myself that the miniature queen-mating nuclei as recommended by Swarthmore (E. L. Pratt) were so unreliable as to be practically a failure; and it is true that our correspondent has abandoned some of his earlier models and the manner of using them. While he made them work, he has devised better ones.

One of our correspondents, after testing his first nuclei, reported that the experiment had been very expensive in that *every one* of the small Swarthmore nuclei into which he put a queen had failed in having even *one* queen successfully mated—bees swarmed out, they were robbed out, etc., and that he did not think we should publish such stuff. But notwithstanding all the adverse reports, Mr. Pratt has been continuing to work at the problem, claiming that he was having queens mated in them successfully.

Dr. E. F. Phillips, of the University of Pennsylvania, visited him at his home, in the height of his queen-rearing operations last season, and saw that he was indeed making a success of these "baby nuclei." When he came to Medina to renew his scientific work he reported what Swarthmore was doing. We had some small one-frame boxes made, and, later on, some of two frames. They have been put to the test, and *so far* are working very satisfactorily. But honey has been coming in a little every day, and this may make a difference. However, we have reason to believe they will work later on, because we have thus far attained a degree of success far beyond what we have had before.

We have had reports from various queen-breeders who have made these little nuclei work; and we feel satisfied that what others can do we can.

This matter is not alone interesting to the queen-breeder. It will mean a great many dollars to the honey-producer. When he is ready to requeen, all he will have to do will be to make up a batch of 25 or 30 nuclei and give them virgins or ripe cells. A few nuclei like this will raise all the queens he will need, in a short space of time, and the expense will be merely trifling. He will hardly need to use up one

colony for this number, as the nuclei will be so small.

When Dr. Phillips visited Swarthmore he found that sometimes, when he caged a laying queen out of the little nuclei, he put all the bees in the mailing-cage. That seemed incredible at the time; but we have done the same thing right here in Medina.

This matter is of considerable importance, because there will be no reason now why the honey-producer can not requeen at least once in two years, and oftener if he thinks there is any advantage in it, at a great saving of time and nuclei.

The great majority of the best producers requeen once in two years, and some go even so far as to think it best to requeen every year, because there will be less swarming when a colony has a young queen and less drone brood.

HOW TO SHIP BEES.

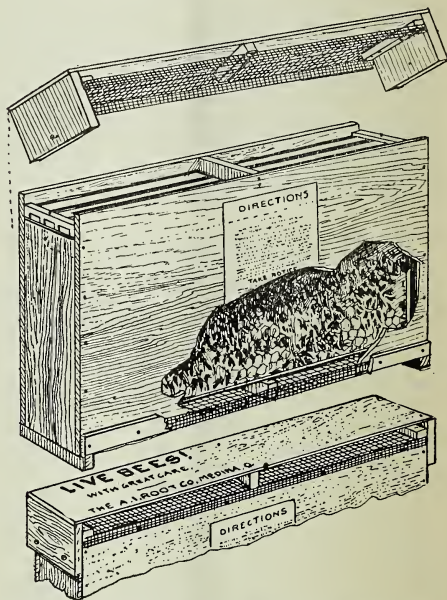
At different times we have had requests for an article on how to ship bees. As we have had a large experience we have thought best to describe the method we use.

The very heavy winter losses made an exceptionally heavy demand for bees in nucleus and colony form this past spring and early summer. While we have been uniformly successful, yet we have been experimenting and testing various forms of shipping-boxes, until we now have something that stands the test for all seasons of the year for long travel, and which on arrival delivers the bees fresh and in good order. Of all the hundreds of nuclei we have shipped this season, I do not think there has been a single complaint of bees arriving in bad order.

The illustration opposite gives almost at a glance our method of shipping three-frame nuclei, the one, two, and four frame being made exactly in the same way, only narrower or wider as the case may be. The box for lightness is made of well-seasoned basswood, only $\frac{3}{8}$ thick for the sides and $\frac{3}{4}$ for the ends. Galvanized wire cloth is nailed under the bottom; and that the edges may not fray out or become loose, narrow strips are nailed along the sides as shown. The galvanized cloth is much stronger, and is, therefore, used for the bottom. To raise this up so as to provide ventilation, two cleats are nailed across the two ends. For the cover we have common wire cloth folded to the proper width, but secured to thin board, of the kind shown detached at the top and bottom of the engraving. The end of the wire cloth is nailed on to the cleats shown at the upper right-hand corner, secured to square blocks supporting a thin board $\frac{3}{8}$ of an inch thick. When this whole cover is set down on to the nucleus, it covers the space left open at the ends of the frames; and when the end-blocks are nailed in place we have a convenient hold whereby the box can be lifted and carried about. The thin board is nailed over the top, not only to protect the wire cloth beneath from

the corners of boxes or any sharp projection, but in order to shade it from the hot sun. In spite of printed requests to the contrary, expressmen *will* leave the bees out in the hot sun; and this of itself may kill the bees or put them in poor condition on arrival. Hoffman frames ordinarily do not need to be secured; but as an additional precaution for rough handling we have cleats grooved to come down over the ends of the top-bars, as shown in the illustration. These are nailed in place. Similar cleats, nailed on the inside of the ends, hold the end bars securely.

On the side of the box are pasted some neatly printed directions telling all about stimulative feeding to make a strong colony of the nucleus. Indeed, it gives full directions how to make increase so that almost any beginner with a little lot of bees like this can go ahead understandingly and meet with success.



In selecting our combs we take those that are just as light in stores as possible—no more than enough to carry the bees through safely to their destination; for even at a rate and a half, the expressage may be considerably more than the value of the bees. Therefore we have the box made of basswood, which for its weight is about as strong and tough as any wood we know of. Then it is cut down to only $\frac{3}{8}$ inch in thickness, so that three-frame boxes weigh only 3 lbs. With three light combs of brood covered with bees the whole thing weighs 12 lbs.

I said that we shipped bees in full-sized hives. For this purpose we take brand-new hives, newly painted; secure the bottom-bar to the hive with double-pointed staples.

Wire cloth is nailed on to a frame the same size as the top of the hive, and 1½ inches deep. The wire cloth should never come close to the top of the frame, for the bees should have a clustering space where they can get a good deal of air in case of necessity. Frames are secured in the same manner as in the shipping-boxes; and when the bees are ready to be shipped out, the cover is secured by corner posts to a distance of 1½ inches over the top of the wire cloth. The purpose of the cover is to protect the wire cloth, both from the sun and from the sharp corners of boxes or other articles. The hive, of course, weighs a great deal more than a shipping-box; but the customer, on receipt of it, has only to put the hive in place, remove the wire cloth, insert the alighting-board, put on the cover, and the bees are "at home."

Right after a honey-flow it is not always possible to secure combs that are light in stores. For that reason the shipment will be a little heavier in July and August than in May or June.

ANOTHER COMB-HONEY CANARD.

The following is an extract from the Pittsburgh, Pa., *Gazette*, of Sunday, July 24, 1904:

HONEY-COMBS ARE MADE FROM OIL.

ARTIFICIAL PROCESS IS GUARDED SEDULOUSLY FROM THE GENERAL PUBLIC; CURIOUS USES OF PETROLEUM.

Among the peculiar uses to which low-grade petroleum and the refuse of the better grades are now being put is that of the manufacture of artificial honey-combs. There are four factories devoted to this product in different parts of Pennsylvania and Ohio, one of them being in the immediate neighborhood of Pittsburgh. The process for making the combs is said to have been evolved by a petroleum expert only after years of experiment, and it is so much of a secret that not only are visitors excluded from the factories in which the combs are made, but the locations of the latter are kept secret as far as possible from all but those connected with or employed in them.

The artificial honey combs are so nearly like those made by the bees, both by the chemical composition of the wax as well as the cell formation, that the two can not be told apart, even by experts. The idea of making them was suggested by honey-dealers of the class whose "bees" produce more of the sweet article than combs can be found for. It is asserted, however, that neither the empty nor the filled combs find a market in this State, on account of the vigorous enforcement of the pure-food law.

Of course, we replied at once. We sent one of our \$1000 reward cards, and further agreed to give them the sum of \$1000, backed by any kind of bond that their attorney could draw up, if they could prove that there were *anywhere* in the United States artificial combs, such as they described, filled with glucose or honey. We explained that we are makers of comb foundation—a legitimate article that has been used by bee-keepers for years.

While our letter may have some effect, yet letters received from thousands of people from all over the United States will have vastly more effect. We therefore request our readers to sit down and write a short but courteous letter to the editor of the

Pittsburgh *Gazette*, protesting against such statements as appeared in their issue for July 24, and request a retraction or a correction, on the ground that the article in question is doing a very large class of honey-producers a direct damage in that suspicion is cast on the purity of *all* comb honey. Do not delay this one day, but send your letter out the very next day if possible. We are just on the eve of the comb-honey season, and such stories do an incalculable damage to the market, and should be refuted at the very beginning of things.

REVISED REPORT OF HONEY CROP FOR 1904.

SINCE our last report conditions have improved; rains ceased, warm weather came on, with the result that there have been flows of clover and basswood honey. In some localities where clover had failed, basswood gave a fair yield.

Were it not for the fact that there had been a heavy mortality of bees during the past winter, the crop of clover and basswood honey might be as heavy as last season; but in many localities where there have been good flows of honey there have been too few bees to gather it. It is therefore my opinion that the aggregate amount of clover and basswood honey will be much lighter than last season; and when I say this it should be understood that the crop last year was *exceptionally heavy*, heavier than we reported for the reason that a large amount of honey not reported was dumped onto the market *after* the regular selling season. Many held back thinking to get better prices; but in this they were most woefully disappointed, and they have no one to blame but themselves.

To particularize, the yield in parts of Wisconsin, Minnesota and Michigan will be from one-fourth to one-half a crop; in Iowa, Illinois, Indiana, New York, Pennsylvania and Ohio, from the best information we can gather, the yield will be fair, but the aggregate amount of honey will not be as heavy as last year, owing to the aforesaid winter losses. Buckwheat in New York promises well. In the New England states, the yield has been light to fair.

Reports are lacking from Colorado, but the few received indicate that the crop will not be as large as was anticipated; yield in Nevada will be good; in Utah will be largely a failure. We have not heard from Canada, but the prospects so far as we can gather are good. In the meantime keep on sending postal card reports of the season.

NO MORE DRONE-LAYERS WANTED.

In our last issue we asked for drone-layers, promising to send a laying queen instead, providing such drone-layers were sent at once. We have now received all we require for the purpose of scientific investigation, and request our readers not to send any more.

N. E. FRANCE, GENERAL MANAGER OF THE NATIONAL BEE-KEEPERS' ASSOCIATION; FOUL-BROOD INSPECTOR, AND LECTURER AT FARMERS' INSTITUTES.

SOME eighteen or nineteen years ago, about the time I began to take editorial charge of this journal, we received a few articles from Mr. E. France, the senior member of the firm of E. France & Son, at Platteville, Wis. There was something about the writings of this veteran that showed unmistakably he was a master of his profession. The short cuts that he recommended for facilitating the work of handling the bees showed very clearly that his knowledge came from that best of all schools—experience. At this time the son, N. E., was comparatively unknown; but some years later, when I visited the Frances, I had the pleasure of meeting the younger man, and I saw at a glance that he was a veritable chip of the old block. Intensely practical like his father, he was readier to grasp new ideas and inventions. The two, father and son, made a fine team; and that they pulled together is shown by the immense crops they secured. I learned that the junior France spent his winters in teaching school. Gradually the mantle that had been worn by the father was assumed by the son, and now he has come to be the principal man of the firm. But the younger France did not come prominently before the world until foul brood had got such a fearful start in Wisconsin. Then it was that he showed his ability "to do things" by going down to Madison and lobbying in the interests of one of the best foul-brood bills that has ever been passed—a measure which, through his generalship, became a law, and which has been in active operation for seven years. But at that time Mr. France had no idea of being himself foul-brood inspector. He simply saw the urgent necessity of a strong and efficient measure that would stamp out the disease that threatened the destruction of a large part of the bees of Wisconsin. To make a long story short, he was appointed inspector of apiaries—a position he has held with signal credit to himself for seven years; and so faithfully has he performed his duties that, were it not for the importation of the disease from other States, he would have stamped it out. As it is, he has it well under control.

For sixteen years preceding his appointment as inspector he was engaged with his father in producing immense crops of honey and big shipments of fruit. During that time they have produced the enormous amount of 460,000 lbs. of honey, or an average of 27,850 lbs. per annum, from an average of about 450 colonies located in several outyards. But, as if so many bees were not enough to keep them busy, they ran in connection with the bees a twenty-acre fruit-farm, selling annually \$50.00 to \$80.00 worth of asparagus; \$150 worth of beets for stock feed, and from 3000 to 12,000 quarts of berries.

Of course, they do not attempt to do all

the work themselves; but during five to seven weeks in the height of the season they employ some thirty or more persons, most of whom are boys from sixteen to twenty years of age. To get the best results possible, each hand is drilled for some special out that line of work.

The junior France's prominence as a bee-keeper, and his successful work as inspector, soon drew the attention of the authorities of the State to him, with the result that he was finally sent out to lecture at farmers' institutes. He is away a great deal of the summer, except during the berry and honey season, and a large part of the winters. He lectures at a hundred institutes each winter in his own State, and sometimes he is called to go into other States to talk bees and fruit to the farmers. So persistently is he being sent from one town to another that he travels something like 4000 miles by rail each year, inspecting apiaries and treating bees, and about 2000 in attending institutes.

Some few years ago, when Mr. Secor announced that he could not accept the position of General Manager of the N. B. K. A. any further, and requested the members to look for some one else, a careful canvass was made on a part of some of the leaders of the organization, resulting finally in the selection and election of Mr. France for the important office. Notwithstanding he has held the position but a little over a year, the membership under his management has increased about half. He has been found tactful, careful, and capable; and at the present time he enjoys the respect and confidence, not only of the people of his own State, but of the bee-keepers all over the country.

Personally, Mr. France is a pleasant man to meet. He is square of build, rugged and forceful in appearance, and when you hear him talk you can not help feeling that *there* is a man like his father—one who knows perfectly well what he is talking about.

For twelve years he has been President of the Southern Wisconsin Bee-keepers' Association; four years Secretary of the Wisconsin State Bee-keepers' Association, and five years President of the same organization; all of these in addition to his duties to the State and to the N. B. K. A. Verily he is a busy man. Some one said, if you wish to get any thing done, and done well, go to the busiest man you can find. While that is not always true, results go to show that the rule holds good in the case of Mr. France. He has been tried, and has not been found wanting.

Notwithstanding he has been a tremendous worker, with these many duties that were thrust upon him by his State and by the bee-keepers at large all over the country, and notwithstanding the advanced age of his father requires that he take personal charge of their own large business, he is hale and hearty, and at 47 he is able to do what would crush many younger men.

Perhaps the secret can be explained by the fact that he never played cards nor gambled; never drank any intoxicating liquor, nor used tobacco, and that he has been a member of the Methodist Church since 1880.

But I came very near forgetting to make reference to the engraving. The large Cowan extractor shows for itself. This is the machine that Mr. France uses exclusively in his yards. At the left is shown one of the large quadruple hives, or, as some call them, "tenement" hives. The fact that E. France & Son are the only users of such hives does not prove at all that they are not practicable when properly managed. Over on the right are packages in which the France honey is put up in small lots. Not all their honey is put up in this way, for a large part of their honey is put up in barrels and kegs. Mr. W. A. Selser, 10 Vine St., Philadelphia, is a very discriminating buyer. For his city trade he can not have any thing but white clover honey. I remember his once getting a large shipment from E. France & Son, because he knew their goods were first-class; and if the firm said it was strictly white clover, without basswood or any thing else, he could depend on the statement.

Perhaps in this connection it might be well to state that Mr. France has tried the new treatment of using formaldehyde gas for destroying the germs of foul brood. The test he has already made does not



N. E. FRANCE.

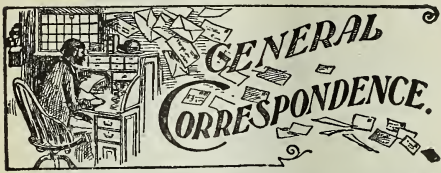
General Manager of the National Bee-keepers' Association, and Foul-brood Inspector for Wisconsin.

warrant him in recommending it to the average Wisconsin bee-keeper, as he found that some combs after treatment would transmit the disease again, and he there-



FRANCE'S HIVE, EXTRACTOR, AND HONEY-PACKAGE.

fore concludes in a recent report that the McEvoy treatment, after all, is the only reliable one for the average person to use.



LUMBER FOR HIVES.

Some Interesting Data on the Way Lumber is being Cut and Exported from this Country; the Giant Trees; California Redwood.

BY W. A. PRYAL.

The editorial remarks in GLEANINGS of May 15, concerning the destruction of Michigan's pine forests, were timely and to the point. More should be done by the State and Federal authorities to preserve our timber-trees from wanton destruction. In California, too, in the past, much valuable timber has been ruthlessly ruined. To-day government forest-rangers patrol our timber sections and thereby save them to quite an extent.

A writer in the April number of the *Review of Reviews* says: "At present there is ruthless destruction and waste going on in southern forests—destruction which, in years to come, will be wondered at. What were, a short time ago, virgin tracts of timber-land, now are blackened, desolate barrens, swept yearly by forest fires, producing nothing except scrub oak and gnarled little field pines, each year becoming hopelessly an unprofitable desert."

And what has been helping to denude the yellow-pine forests of the South and the white-pine forests of Michigan and other Northern States has been playing like havoc elsewhere in the United States. I have seen long stretches of mountain-sides in Santa Cruz Co., California, cleaned of pine and fir trees by forest fires. Only here and there would remain a blackened shaft to tell the tale that once on those grand slopes stately trees reared their tops to heaven. The California redwood fares better, for it is a sort of salamander among trees. While the fire-fiend is not so apt to do it any lasting harm, still the vandal woodman too often degrades the sacred precincts where it grows. Too oft, I say, its noble form is laid prone upon the hillside there to decay, all for the reason that the timber hunter wanted to get a few feet of the straight-grained wood from its trunk for shakes, shingles, railroad ties, or "split" rails. The portion that would make boards with but few knots is left to rot or burn.

The present consumption of timber for domestic use and for export trade in the United

States is something astounding. Few persons have any adequate conception of the output of our lumber-mills. The writer above referred to states that "the output of Southern yellow-pine mills during 1902 was over 9,500,000,000 superficial feet . . . and that if this lumber were in the form of boards one inch thick and one foot wide, and these boards were put end to end, they would form a continuous belt running from the earth to the moon over seven times." Add to this the output from the remainder of the country, and what a vast quantity of lumber it must be! We are living too fast—yea, we are consuming the blessings given us, at a rate that may leave future generations to sit out in the cold and freeze to death.

The great lumber section of this country at the present time is in the North-east—Washington, Oregon, and the northern portion of California, including a narrow strip extending down the Sierra Nevadas into Southern California. It is to this portion of the United States that the East is looking for its future supply of building material. It has caused more than one railroad magnate to extend his hands of steel to the Pacific, there to tap the pine forests. To-day railroads are being built into the redwood forests of California. Until recently the trade was satisfied with what would come to market by coasting vessels.

And now across the continent comes the question, "What shall we bee-keepers of the East make our hives of when our supply of white pine is exhausted?" To this Californians can answer, "We can give you the finest hive material in the world. We have two kinds of wood to offer you, but our redwood is the best of all." Yes, and it is to be had in abundance. As is pretty well known, this tree is to be found in Northern California along the coast. I have often thought it a shame that so fine a wood should be used for hive material. But why should we hesitate to convert it into hives when the Californian uses it for pigstys, hen-coops, watering-troughs, wine-vats—in short, everything that he uses on the ranch, orchard, vineyard, mine, and factory is made out of this great utility wood. It is an easy wood to work, and it is still sold at a reasonable price. It forms the shingles that shelter the Californian from the elements above; it makes the mud-sills that support the house as well as the rustic who encloses it about; and when the time comes for his worn-out remains to be put in their last resting-place, a redwood casket becomes his final home. What a generous wood! what a glorious and all-seeing Providence, to provide so liberally for the inhabitants of the Sunset Land! It would seem that it was no afterthought of the Creator in thus placing forests of such valuable wood in what may be said to be the last great land thrown open to civilized man. There, half a century ago, were discovered trees that were bigger before Adam was created than were the trees the average man sees in his daily walks, if we can

place any reliance upon the speculations of scientists who say some specimens of the gigantic trees of California are more than six thousand years old. To-day these trees stand the oldest living wonders of God's handiwork. There may be "sermons in stones and music in running brooks," but grand indeed is the inspiration to be had as we stand in awe and view the majestic trees of California.

While the big trees (*Sequoia gigantea*) are capable of furnishing hive material, it is to their younger cousins, the redwoods (*S. sempervirens*), that we turn for our hive stuff. The former trees are to be found in a few small groves in the Sierra Nevada Mountains in the eastern portion of the State; the latter, in forests of greater or less extent from the Bay of Monterey northward along the coast to near the Oregon



THE TYPICAL REDWOOD FOREST-TREES OF CALIFORNIA.

line. A few of the smaller of these forests, especially in San Mateo, Alameda, and Contra Costa Counties, have already been deprived of their timber trees. Being near San Francisco, they were the first drawn upon for lumber. None of these small forests had many trees of remarkable size. In Santa Cruz Co. some large redwoods are to be found, and it will be many years before the woodsman fells the last one.

It is only a few years back since a grove of these trees was found in the Big Basin, sixteen miles north of Santa Cruz, toward San Francisco. The State has since acquired ownership of the Basin, and converted it into a public park. In this park are to be found some of the largest redwood trees in existence. The tree is a native of California, and the State wishes to preserve the finest grove, as it is also doing with the big trees already referred to.

Northward of the Pacific metropolis, in Sonoma, Mendocino, and Humboldt Counties, are dense forests of redwood. While thousands of fine trees have been ruthlessly slaughtered, there is yet a supply left that it will take years, may be a century or more, to remove. Those who have been over the coast country tell me that the forests so far have only been "fringed" in places. This is encouraging; yet the lumber-hunters may swarm into these forests and fell the trees in the most strenuous manner.

Ten years ago, when traveling in company with the late Mr. J. H. Martin (the lamented Rambler), several times for a good portion of a day we would traverse a redwood forest, the trees of which would sometimes be fully six feet in diameter. These trees would be far from the habitation of man, and further still from a railroad. The vastness of these forests can not be realized until one has been within the silent and cathedral-like expanse they form. They truly must have been "God's first temples." Oftentimes the trees are so tall and close together that the very light above is shut out. It is in these northern countries that the rainfall is greatest in California. Such a thing as a dry year is unknown. The county of Mendocino, which has boundless redwood forests, is one-half the size of Massachusetts. Then the forests of Humboldt are nearly as large. The city of Eureka owes its prosperity principally to its being a redwood center. I visited one of its lumber-mills, and was struck with wonder at the rapidity with which immense logs are converted into building material. Big band saws would cut through a log as fast as the truck or car could feed it to the saw, and the inch sheet or slab of wood, often from four to six feet across, would then be carried to another machine, which would trim it and then cut it into boards of the required widths. The demand for this wood during the past four or five years in our Californian cities, owing to the rapidly increasing population, has been great, and the price increased so high that the mills of

Oregon are sending in a pine rustic which is being used as a substitute for redwood rustic, the pine being cheaper, and, as might be expected, far inferior to the other. To show how highly redwood is prized, it will suffice to state that carpenters and architects will not allow any thing but the former wood to be used on the front of a building, mainly because it is so durable and almost free from shrinkage. While Oregon pine forms the framework and floors of a California building, it is redwood that is used for shingles and the siding and millwork portions. Nothing else will do, as already stated.

Until a few years ago the wood-chopper cut the trees off high above the ground. This was owing to the butts being heavy, and incapable of floating to the mill. Now the "sinker" portion of the tree, which contains the choicest wood, is cut low, as modern means of transportation are used in taking the logs to their destination.

There is an organization in San Francisco called the Sequoia Club that has for its object the fostering of a taste for the use of the wood under consideration, for furniture and in the arts. It is doing good mission-ary work in this direction. The wood is susceptible of a high finish; and its grain, in the choice stump and root portions of the tree, are very pretty. The wood is highly prized in foreign countries, and forms the interior finish of many a nobleman's palace, to which it was carried at a neat cost.

The wood is devoid of any visible gum or pitch, and is noted for being slow of combustion. This is said to be the reason why no serious fires have occurred in California cities, though I doubt that, if a fire should get a good start when the season is at its driest, and the wind at a brisk pace, the redwood material would offer any great barrier to the fire-fiend. Yet the fact remains that, to burn a redwood stump out of the ground, is almost as hard a task as to get rid of a granite boulder in a cow pasture by similar means. Again, redwood is durable. It is the fence-post wood of California—in fact, it is the only wood that can be trusted near or in the ground. It does not rot rapidly, as do the pines.

A redwood's life is not ended by cutting the tree down. In due season, a crop of sprouts springs up around the stump, and in time several fine trees will be found growing where but one tree grew before. A fine forest of these young trees, sixty to one hundred feet high, is to be seen at Mill Valley, a fashionable suburb of San Francisco, in Marin Co. The parent forest was raided and destroyed some forty and more years ago.

For hives, as I have hitherto said, there is nothing better than this wood. Even the cheaper grades of the wood are serviceable. When the wood is seasoned for a few months in summer, there is no fear of any material shrinkage thereafter. I have used it for hives for thirty years, and the older ones are as good to day as they were when made.



"GRIZZLY GIANT," 33 FEET IN DIAMETER.

Photographed by Taber, San Francisco, Cal.

I have seen hives even older than mine that are in fine condition still. One thing about the wood is that it is easy to get wood of great widths so that covers and bottom-boards may be all in one piece—a thing much to be desired in hives. As the wood splits easily I do not think it preferable to use it in covetailed hives. I do not remember seeing our box-factories thus using it, spruce being preferred. I would have redwood hives halved together.

A few years ago a grade of redwood lumber containing but few knots sold at from \$12 to \$14 per 1000 feet. This same stuff now brings \$18 00. Selected wood, dressed on one side, such as is used for interior and outside finishing of buildings, sells for about \$40, though the price has fluctuated considerably. A good hive material may be had for about \$20 in the rough.

In making hives hereafter, I propose to have the covers at least $1\frac{1}{2}$ inches thick. The lumber is cheap enough to allow of this; besides, the wood is less liable to warp, and, as it is necessarily heavier, it is not so apt to be blown off.

The day may not be far distant when we shall hear of Eastern hive factories making hives of our California redwood. When they do, a far better hive will be at the command of bee keepers than any they now use in the East. It will, in the first place, be more durable—not so liable to warp or split or check, and, what is of most importance, solid covers all of a single piece can be used. Why should not such covers be used, when trees may be seen in the Golden State that have a diameter of 33 feet, as is the case in that wonder of the vegetable kingdom, the "Grizzly Giant," of one of the big tree groves.

Any one visiting San Francisco should take a side trip to Mill Valley, in Marin Co., less than forty minutes' ride by steamboat and electric train, and see the handsome grove of redwoods in that pretty valley; or a trip may be made up to Cazadero among the big trees of Sonoma Co. It is among these woods that scenes like the big clean-cut redwoods shown in the large halftone on page 751 are to be seen. Or a trip by way of Oakland over the Narrow Gauge route may be made to the big trees, about 80 miles south, in the Santa Cruz Mountains. One of the most picturesque trips in California is over the California Northwestern Railway into Mendocino Co., one of the garden spots of the State. In this county are to be found fine mountain and lumbering scenes.

[There is no doubt at all that redwood is a splendid timber for hives. When I was in California I investigated this question very thoroughly. While the timber would do excellently for hives, covers, and bottoms, from the information I could gather I was satisfied that it would not do for brood-frames and inside hive-fixtures. Redwood is very brittle, and a brood-frame made of it would split or break at the projecting

ears. A manufacturer can not afford to make hives out of any lumber that will not at the same time be suitable for every part of the hive, except, perhaps, the sections; otherwise he would not be able to use up the refuse that would be too poor for the hives and this would make the hive cost considerably more. There is plenty of good white pine in Canada at the present time; and for the next ten or twenty years there will be enough left to take care of the hive interests; and, taking it all in all, I doubt very much whether redwood would ever be accepted as a satisfactory substitute.—ED.]

PLANTING FOR HONEY.

Sainfoin as a Honey and Hay Producer.

BY ADRIAN GETAZ.

That it would not pay to use valuable land for honey-plants is now generally admitted, and such planting will not be considered here. Valuable crops, producing honey as well, might be considered; for instance, buckwheat. But there are only a few of that kind. One, however, deserves special mention because it is not sufficiently known and appreciated here. It is *sainfoin*. As hay it is unequaled, being superior to both alfalfa and red clover. It can be cut twice a year. It is a great honey-yielder. The honey is light amber, and similar to that of red clover. The best part of it is, it gives the best hay when cut just at the time the last blossoms are going out, thus securing a honey crop (or, rather, two, since it is cut twice), without interfering with the hay crop. It is a deep-rooted plant, and lasts several years. It is partial to limestone ground. If the land is compact, it must be subsoiled so as to let the roots reach a sufficient depth. On non-limestone ground a liberal application of lime should be made.

This plant is not a novelty, but has been in cultivation in Europe for a century and a half, and is as well thought of now as ever—perhaps more.

TREE PLANTING.

But there remain the streets or roadsides, many pieces of land too steep or too rocky for cultivation. In the prairie States, large areas of land are planted in trees to furnish the lumber needed. If we are to plant trees it is best to plant those furnishing a valuable quality of lumber, and those which produce nectar at the same time. I think it would be better to plant several kinds of trees rather than only one. The object is to obtain as long a honey season as possible, rather than a short but heavy flow.

In this latitude a succession could be obtained by beginning with the different kinds of maples for an early start. There are almost everywhere enough fruit-trees to fill that period of their blossoming, so no provision need be made on that score. Immediately after comes the honey-locust; then

a little later the poplar (tulip-tree, or whitewood). These two somewhat overlie each other. The tulip always yields a large amount of honey; but it is dark, and of a reddish color, though of a good taste.

This brings us to the end of May. Early in June comes the persimmon. The honey is of a golden color, and first-class in taste. This yield never fails; but the period of blossoming is short—from 10 to 15 days. After a few days, more or less according to the season, the sourwood begins. This gives us our best honey, almost water-white in color, very sweet, with just enough of the finest and most delicate aroma that can be imagined. The blossoming lasts from three to five weeks, but often the nectar fails—at least here in the valleys. In the mountain coves and hollows, where the land is rich, deep, and moist, the yield never fails, and is very abundant.

The basswood must be mentioned. It is found now only here and there, having been nearly all cut down for lumber. Its period of blossoming lasts some three weeks between persimmon and sourwood, overlying both.

Of the eucalyptus and other trees recently introduced in California I can not say any thing, from a lack of sufficient practical knowledge. For what I know, a large part of Australia enjoys (?) a pretty rough climate, and some of these trees and shrubs are likely hardy enough to stand the winters of a part, at least, of the eastern side of the Rocky Mountains.

A BIT OF FORESTRY.

Groves of trees have been extensively planted in the Western States. The cottonwood, owing to its rapid growth, has obtained the general preference.

Judging by the illustrations I have seen in GLEANINGS and other magazines it seems that the trees have been planted at the distance they were finally to occupy, just like planting an orchard of fruit-trees. That will not do. Trees thus planted throw out enormous lateral branches, and have only a short trunk, usually full of knots. When cut, the whole outfit is useless for any thing but firewood. Forest-trees should be planted close together, say two or three feet apart. Then, instead of growing laterally, they grow upward rapidly, having branches only at the top, and even these die out when still little as fast as others grow above them. When the trees are 12 or 15 feet high the first thinning takes place. The poles thus obtained have a sufficient value to pay for the work. Later a second and finally a third thinning take place. This last is when the trees are perhaps 4 to 6 inches in diameter. This leaves the remaining trees at the final distance they are to occupy. The distance at which the trees are to be maintained throughout their growth is, roughly speaking, about one sixth of their height, but varies with the different kinds, the climate, and nature of the soil.

A second mistake is planting an inferior quick-growing kind of timber alone. Such should always be mixed with valuable varieties. When the inferior timber finally comes off, there is left on the ground a half-grown crop of valuable timber, worth more later on than a second planting of inferior lumber could have been, notwithstanding its quicker growth.

PLANTS.

While the trees are growing, and even after they are grown, there is no use in leaving the ground under them naked. It might as well be planted or sown with something suitable for honey production. A great many plants, some with very beautiful flowers, could be used for that purpose. Owing to their ability to resist drouth, the sages and other California honey-plants deserve full investigation.

From a practical standpoint, it is probable that the white and yellow sweet clovers are the best known for that purpose. I would use both in order to have the flow extended as long as possible. The European books speak of a third kind (*Melilotus officinalis*), with a blue-purple blossom, and possessing some medical properties. They always recommend it as the kind to be sown for the benefit of the bees. It might be well to try it.

In a back number of the *Bee-keepers' Review* is a splendid illustration of the cucumber-plant. It is a climbing plant growing chiefly along the creeks, and climbing away up in the trees. It bears an immense number of blossoms, yielding nectar quite freely. A great many plants are called by that name. What the real plant spoken of there is, I don't know. Nothing like it grows here.

In Cuba and other tropical countries, another climbing honey-yielding plant is found—that is, the *aguinaldo*, or bellflower. The readers of this will smile when I say that this might be introduced here. But how many of them know that our common morning-glory is a tropical plant, which was first brought into gardens, then got loose, so to speak, and has spread everywhere? Furthermore, the morning-glory and the aguinaldo are very similar; and if one has been acclimatized, why not the other? We might try, anyhow.

Knoxville, Tenn.

[Sainfoin was considerably talked about as a honey-plant years ago, and our experiment stations have tested it more or less; but I believe it has never obtained much favor in the United States. As basswood timber is now rapidly advancing in value, I should recommend it, especially as it is such a rapid grower, before any of the other honey bearing trees. As aguinaldo has no value except for honey, I am sure it will not pay to undertake to introduce it in the United States, and I feel like cautioning bee-keepers, especially beginners, about undertaking to grow any plant for honey alone. All of the clovers are valuable

aside from the honey they bear, and we can grow them by the acre or hundreds of acres without any fear that the project will be a failure. Our catalog of honey-plant seeds gives a pretty full list of the plants that may be safely grown for honey, because they have a market value for other purposes.—A. I. R.]

THE QUESTION OF THE SECOND MATING OF QUEENS.

BY FRANK BENTON, M. S.

(Apicultural Investigator, United States Department of Agriculture).

I did not state distinctly in my article entitled "Queens Mating Twice," published in GLEANINGS for April 15, 1904, page 385, that the queens whose records were there given did not lay any eggs between the first and second matings, yet I thought that matter was rather understood. However, in the number for June 1, page 551, Mr. W. M. Whitney questions this. Not only were no eggs laid previous to the second mating, but the queens, after their return from the first mating, with the drone appendages attached to their bodies, presented no other sign of having mated. That is to say, when these appendages had dried up and disappeared the normal size of the virgin queen was preserved until after the second mating, and no eggs were deposited. This argues that the first mating was wholly ineffective.

The question of whether a queen that has mated and begun laying normally can still mate again is quite another matter. I think, however, the fact now well established that a queen does meet the drone and copulate a second time is an indication which we are warranted in taking as pointing to a possibility of such an occurrence after the effect of the first mating has disappeared, or even the bare possibility that a queen taking a flight from the hive during an interval when her body is not heavy with eggs, might copulate a second time. I have no positive evidence of this, but there are some things which occur which point to the possibility of it. All will recollect that the point has often been mentioned in the bee-journals of the frequent disappearance from the hive of clipped queens, it having been claimed that they were more likely to be replaced than those which had not been clipped. May it not be that they leave the hive for the purpose of mating a second time? Again, many complaints have been made that queens which experienced breeders had sent out as producing bees of pure blood had really been mismated. I can not now recall the year, nor do I think any mention has been made in print of a little occurrence dating back to the time when I was located in Carniola, Austria, breeding queens of the Carniolan race, but I have a very distinct recollection that several queens were sent to the A. I. Root Company, from my apiary, and could have been no other

than pure Carniolans, since there were no other bees in the province. Some months later the statement was made in a personal letter from the A. I. Root firm, that these queens, which had apparently first produced good Carniolans, were breeding bees showing Italian blood. Mrs. Benton suggested that, by the following year, very likely they might produce pure Carniolans again! Observations of a similar character have cropped out in apiarian literature repeatedly for many years back. The question here arises, Might not this also be another case of second mating?

Whatever the text-books may say to the contrary, there is one point on which I am quite decided; namely: That queens which have mated and begun laying do, in after-life, leave the hive and fly about when unaccompanied by a swarm, and, in the latter case, are disposed to return, and nearly always do return. But should the hive contain a small nucleus only, all of the bees in the excitement sometimes accompany the queen, and then they are likely to cluster as a natural swarm. All will recollect the fact that small nuclei sometimes desert their hives, even though all the conditions seem to be favorable for their remaining. Of course, these are exceptional cases, yet they show possibilities. It will generally be found to occur after the queen has got the combs well stocked with brood, so that, being in a very small hive and very prolific, she is obliged to check her laying, and finally, being light-bodied, seems to take pleasure in outside excursions. The bees, noting her excitement, go out and probably accompany her accidentally, as it were, leaving brood, honey, and a well-ventilated nucleus-hive behind. Have we not here another indication of the possibility of second mating, each one of which might be effective for a time? For my own part I am prepared to believe in the strong possibility of its occurrence under exceptional circumstances—rarely, of course, but that it *may* on occasion occur. I do not believe, however, that a queen failing, because of age, to lay fecundated eggs, would mate again.

Bureau of Entomology, July 12.

[The following may be a case in point.—Ed.]

DAUGHTERS FROM A PURE ITALIAN QUEEN PRODUCING BLACK BEES.

I have an imported queen which I used last year as a breeder, and nearly all queens reared from her produced bees as finely marked as I ever saw. During the honey-flow this season those queens proved to be so prolific, and the bees from them were such hustlers, I concluded to stock most of my apiary from her (the imported one). I set to work, and by the time I got some 25 to laying, the bees from the first ones had begun to hatch. As I had nothing but Italians, and there are very few black bees in my vicinity, my apiary being in a roar with Italian drones, right when

these queens were mating, of course I expected my queens to be purely mated. I examined the first that began to hatch, and, to my surprise, found black bees in every nucleus. I then decided to wait until the bees from the other queens hatched, but, alas! they were just like the others—every queen produces both kinds of bees, while some of them produce bees nearly all three-banded; others produce nearly all blacks. Some may say the imported queen died and the bees reared another that is not pure; but that is not the case, for the tip of one wing was cutoff, and it is so yet. I should be thankful for an explanation of the above.

D. P. BUFKIN.

Stringer, Miss., July 12.

[Mr. Benton's suggestions and opinions should have some weight. We have had quite a number of reports where the stock seemed to change, as indicated in the item above. In view of what Mr. Benton has to say, and the opinion already offered by W. Z. Hutchinson, I am open to conviction, although I have put myself on record as not crediting second mating after laying. Let the evidence come in, whatever it may be.—Ed.]

A RETROSPECTIVE GLANCE.

How the Late Charles Dadant has been Vindicated in France.

TRANSLATED FROM L'APICULTEUR BY DR. C. C. MILLER.

[It is, perhaps, not generally known by American bee-keepers that Mr. Charles Dadant was practically the introducer of the movable frame in France, and, in fact, over a large part of the continent of Europe. His progressive ideas were accepted by all French journals save one. That journal, *L'Apiculteur*, opposed him most violently, especially during the lifetime of its former editor, Mr. Hamet. Mr. Dadant knew he was right—knew that the movable-frame hive was bound to supplant the old box hive or straw skep; and he persisted in advocating these newer ideas. Like Galileo of old, he would not recant, but persisted in trying to make the world see and know what he knew. As our respected friend drew his inspiration from Langstroth and modern bee-keeping as it is known here in America, it may be somewhat interesting to our readers to see that the last opposing prop has been knocked out, and all France has come to recognize the value of the system first brought to the world by father Langstroth; but it took a Dadant to bring it to the knowledge of the French people. That he was finally vindicated in the very journal that so violently opposed him can not be other than a source of great satisfaction to Mr. C. P. Dadant, who writes the article defending the position maintained so valiantly by his father. It is to be regretted that this vindication could not have been during the life of the elder Dadant. The following introductory note from the editor of *L'Apiculteur* is self-explanatory.—Ed.]

[It is our good fortune to be able to present to our readers an article from one of the most renowned apicultural writers, Mr. C. P. Dadant, who kindly assures us of his collaboration. The movable-frame hive, which alone he advocates, was, at its debut, violently opposed in the *Apiculteur*; but what progress has not been opposed at its birth? Besides, is not some conflict

necessary to make us appreciate that which is new?

"To conquer without peril, we triumph without glory."

At all events, this alliance of the descendants and successors of former adversaries is a sign of the times; we doubt not it will rejoice the hearts of French bee-keepers who honor us with a perusal.—*Editor Apiculteur.*]

Mr. Editor:—In accepting to-day the title of corresponding member and collaborator, so graciously offered by the Society, and by the oldest and best-established of the French apicultural journals, I desire to correct the impression that may be left by the obituary notice of the senior Dadant, published on the first page of the *Apiculteur* for September, 1902. Of the twenty or thirty bee-journals that have up to this time mentioned his death, the *Apiculteur* is the only one that has found any words of criticism upon his works. I believe that, if the author of this criticism had had before his eyes the exact facts he would have expressed different views.

Among the subscribers of the *Apiculteur*, very few, without doubt, read it thirty-five years ago. Only those who did can recall the controversy over the movable-frame system. Let them read again, if they have kept them, the numbers of the *Apiculteur* from 1869 to 1875 and they will see the efforts made by my father to be heard in the cause of apicultural progress, and the manner in which he was received. It is not, then, astonishing that there was bitterness of heart upon this subject. Elected as a member of the Central Society, his name was arbitrarily erased from the register because he insisted on maintaining positive views upon apicultural progress. But it is a mistake to believe that he disliked what came from France. He was a Frenchman at heart as well as by birth; and they who attacked France were sure to find in him an adversary as fierce for his native land as he was for the cause of progress.

For thirty years he kept up the gratuitous battle for progress, in one journal or another; but at the last, especially in the *Revue Internationale*, a journal which has only lately ceased publication, after twenty-five years of conflicts crowned with success. Not only did he love discussion, but he sought it, and was never more happy than when he found an error to combat. Certainly that injures him only with his adversaries. A French writer eulogizing Descartes said, "The last crime to be pardoned is that of proclaiming new truths." But it is also the best means of compelling progress.

Student and collaborator of my father, I was eighteen years old when the conflict began for him. I am now fifty-three. The reader will kindly permit me to rehearse the past. I do not seek controversy; controversy is not to my taste. I only wish to mention the progress made, the establishment of the movable-comb hive and extrac-

tor upon a grand scale, with their results. In this progress many have participated, and day by day the progress is more rapid.

That which the progressive apiculturist sought and found was the means whereby he might keep his bees entirely under his hand, with the ability to direct them in every thing. To aid feeble colonies; to take honey from a colony too bounteously supplied and give to one which was lacking; to replace queens insufficiently fecundated, or those which died by accident; to improve the stock by choosing the best breeders; to diminish the production of drones while increasing that of workers; to control swarming to a certain degree; to prevent the moth by reducing the combs in weak colonies to the number the bees could cover; to detect foul brood at the first sign of the malady—in fine, to increase the production of honey of the first quality by all the most practical means, that was the task. For all these operations a hive was needed that would give facilities for examining every nook and corner of the combs—a hive that could be taken apart like a puppet-show. Such is the movable-comb hive. Whatever the name or form of the hive, Sagot, Voirnot, De Layens, etc., one sole condition *sine qua non* is that the combs shall be separated from the walls by a space large enough for the passage of a bee, at sides, bottom, and between the stories. Aside from that, opinions may be divided as to the height, width, and length of the body of the hive and the super, the manner of suspending the frames, and the direction the frames shall run; but the base of the progressive system is the movableness of the combs at the will of the operator. All the other conditions are secondary.

The objection often made to the high price of movable-frame hives has been proved of no consideration by those who know what advantage this expense gives in results. A hive well cared for, and protected from the inclemency of the weather, even by the roughest roof, will last at least forty years, making thus an expense the bee-keeper will hardly have to bear more than once; and each year he will draw in return compensations that will pay, many times over, the interest of the money and the liquidation of the outlay. The facility with which the production of an overplus of drones may be prevented in a large apiary will of itself be an appreciable economy. He who holds to the old system solely for the sake of economy finds himself in the position of the farmer who continues to buy cradles and flails under the pretext that harvesting and thrashing machines are too expensive. Yet the farmer might have the excuse that his field is too small or too stony for the use of the more perfect machines, while there is not an apiary, however small, which can not accommodate itself to hives that are practical and economical because of the manipulations which these hives permit. On the contrary, the owner of a small apiary will take more pains, and will have greater re-

sults from the very fact of the limited number which permits him to do all the work himself in the best manner.

The utility of the centrifugal extractor, which permits the taking of the honey without destroying the combs, and without having the honey mixed with brood and pollen, is such that the hive and extractor together round out one complete whole. For thirty-seven years we have each year employed regularly the extractor upon several hundred colonies of bees. Living in a country where comb honey brings fifty per cent more than extracted honey, we have, notwithstanding, found a much greater profit in extracted than in section honey, because of the great economy resulting from the saving of building storage combs one year after another, especially in mediocre seasons. Southern California, Arizona, Utah, all honey regions par excellence, are devoted to the production of extracted honey on a grand scale. In certain mountainous regions of California, where all the hills are covered with sage, extracted honey is the chief product; and it is not uncommon to see the village grocer buy honey by the hundred barrels to send to the populous centers. Box hives with fixed combs are almost unknown, and it is under serious consideration to prohibit their use by law, because with such hives the first appearance of foul brood can not be discovered, as it can with hives which easily allow the removal of the combs for inspection. In a warm country densely occupied with bees, the prevention of this malady is a vital question; for if it once gets a foothold it will make very great ravages.

An idea of the extensive use of the extractor in the United States may be had from the fact that the establishment of The A. I. Root Co. alone, in the year 1903, made and sold 1171 honey-extractors, and they say they have sold more than twenty thousand since the beginning of their business. I have this from Mr. Calvert, the secretary of the company.

As to hives, in the United States box hives are no longer in use except among owners of bees who neglect this branch of agricultural industry. In Europe, where liquid honey is much more esteemed than comb honey, the question of the extractor has also made its way, and the great production belongs henceforth to the new apiculture. It is true that one still sees some opposition. This is not surprising; but let him who doubts try it and he will soon be enabled to judge for himself.

Progress is always slow, but nowhere can one doubt its future. Even Egypt sees its old monuments surrounded by the new civilization. The old temples, historic and useless, of the isle of Philæ, do they not find themselves threatened with inundation by the modern and utilitarian embankments of the Nile at Assouan? When ancient Egypt herself yields to progress, we may have confidence in the future.

HAMILTON, ILL.

C. P. DADANT.



CUTTING UP CANDIED HONEY; LEARNING
HOW TO DO IT BY VISITING SOAP-
FACTORIES.

If you want to know how to cut up candied honey into square portions of any given weight with the simplest of apparatus, I would suggest you visit one or two soap-factories near by, and in a few minutes you will get the hang of the whole matter — especially if you are shown the method of cutting up blocks of toilet soaps. I could give you details, but ocular demonstration at your own door would be so much better I refrain; but I would suggest you visit more than one factory, as no two cut up their blocks of soap in exactly the same way. The methods of some are too elaborate for the average bee-keeper; others, again, have a system that is simplicity itself.

The crystallizing of the honey in cans that have to be cut up and destroyed is a very crude method. Why not solidify it in rectangular molds with detachable sides and ends, said molds to hold from 100 to 1000 lbs., which should be lined with *washed* calico to prevent honey sticking to the sides. Ask the soap people to show you their soap-frames, and this point will at once be clear to you.

I presume that, among your many subscribers, you have some in the soap trade; but don't be disappointed if they should prove niggardly in giving their information — at least such has been my experience during the 40 years I have been among them. The honey business stands out very conspicuous in the freedom with which, on the whole, its members are ready to *give* freely of the best of their knowledge. Should you fail to get the details you require I will see what I can do from this distance.

WM. C. BROWN.

Dunedin, New Zeal., June 7.

[Your suggestion to visit a soap-factory is a good one. I will make an effort to get into one at the very earliest opportunity. I think we shall have no difficulty if we can satisfy them that it is honey we want to cut and not soap.]

The plan of taking honey out of a square can may, perhaps, seem a little crude, and wasteful of the can itself; but honey may not candy for several weeks to be solid; and a great part of the honey now being shipped comes in 60-lb. square cans; and if it is candied it must be remelted, run out of the cans, then put where it will granulate again in bricks or bags as the case may be. This will consume a great deal of time, and more than offset the value of the

can. If the honey is to be recandied at all it should be poured into little vats (not large ones) holding chunks of just the right size to retail. There will be no use of having it candy in a large vat and then cutting it with a wire unless one could not determine in advance what size of bricks he would require for his trade.—ED.]

THE SWARTHMORE METHOD OF QUEEN-
REARING IN ENGLAND.

At the 65th annual exhibition of the Royal Agricultural Society of England, held at Park Royal, London, during the week ending June 25, in the bee department, class 411, for any appliances connected with bee-keeping, the first prize was awarded to James Lee and Sons, of Highbury, London, for a complete outfit in full work, showing the Swarthmore system of queen-rearing. The judges in this department were Thos. W. Cowan and the Rev. Mr. Evans.

The *British Bee Journal*, in the report of the show, gives the following honorable mention: "In class 411, Messrs. Lee obtained first prize for a very interesting exhibition of a Swarthmore outfit for queen-rearing in active operation. Live cells were being worked out and larvæ fed, and the whole process was practically demonstrated from the commencement, ending with two little nuclei containing fertilized queens."

I understand that Messrs. Lee have been appointed Mr. E. L. Pratt's agents in England for the sale of the Swarthmore queen-rearing outfits, and for his golden-all-over queens. They were supplied with the appliances, and instructions for using them, in May, and from the report in the *British Bee Journal* they appear to have succeeded remarkably well in their first attempt in rearing queens and getting them mated in small nucleus boxes.

Mr. Thos. W. Cowan, one of the judges, is a thoroughly practical and scientific bee-keeper, is well known to you, Mr. Editor, as the inventor of the Cowan extractor you manufacture, also to Prof. Cook and many of the leading apiculturists in the United States and in Europe. An award at an important exhibition made by a judge of Mr. Cowan's standing goes far to substantiate the practicability of the plan, and an improvement on older methods.

Philadelphia, Pa. JOHN M. HOOKER.

TWO QUEENS IN A CELL AGAIN.

In a recent number of GLEANINGS the editor asks for reports from any one who may have found two queens in a cell. Three years ago I found just that condition in one of my colonies. The queen-cell was about two thirds as long as my little finger. On cutting it open I found two queens well developed. They probably would have emerged within two days.

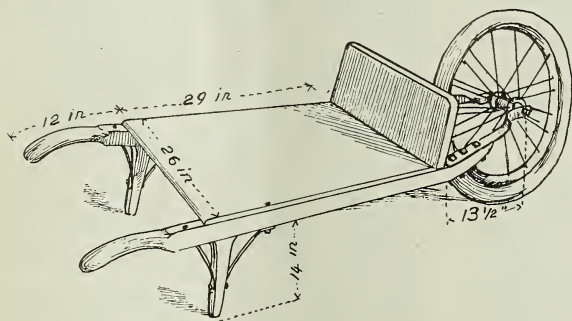
WM. M. WHITNEY.

Lake Geneva, Wis.

A WHEELBARROW WITH PNEUMATIC TIRES.

Reading the writings of Mr. Doolittle, p. 327, leads me to write of an improvement in moving bees, combs, frames of wired foundation, and things fragile, needing freedom from jar in moving, which I find very satisfactory, and have intended giving before. It is an improvement and not an original invention, for it is but a wheelbarrow. Instead of a heavy iron-tired wheel in front, bumping and jarring along, we have a pneumatic-tired bicycle-wheel hung upon springs, which takes out that little nervous jolt so irritating to bees, and which breaks down comb and foundation in cool weather. A wheelbarrow is too common a thing to need details of construction; but as they must be made different for a bicycle-wheel, perhaps I had better give the dimensions which I used.

The wheel was a 28-inch one. This is quite a large barrow-wheel, but it bears out all you say on page 1013, 1903, in regard to small wheels. For a frame get a piece of plank, the best timber you can get. I used white oak, well seasoned, $1\frac{1}{2}$ inches thick. Rip out two side-pieces $1\frac{1}{8}$ inches wide (if you want crooked handles don't forget to allow), and dress up. For springs use a light flat spring, crooked and twisted as shown in the drawing.



Take your wheel and frame to the best blacksmith you have, for it is quite a fussy job to get the wheel to line up true. For me I should prefer to have the springs bolted on top, as suggested in the drawing, instead of bottom, as is usually done, for it lowers the platform, making it just 14 inches from the ground. While it will not hold up as much as some wheelbarrows, it will easily carry two colonies, and I have carried three. I tested the wheel I used to 170 pounds, and, counting the amount lifted by the handles, I think I am safe in saying they will carry 250. Be sure to use good timber for side pieces, for I have given light dimensions. G. A. BOSTWICK.

Verbank Village, N. Y.

[This is one of the best ideas that has been offered for a long time in these columns. Those of us who have had any thing to do with automobiles or bicycles

know that pneumatic tires have a resilience and a smoothness of running that is equalled by nothing else. A solid iron tire can not be compared to it in the least, even though the wheels of such vehicles have good easy springs. A pneumatic tire will run over small obstructions without producing a tremor to the vehicle it is carrying—something an iron-tired vehicle can not do. I do not know but we ought to furnish bee-keepers with wheelbarrows having pneumatic tires, at an extra price. I wonder if there would be a demand for them. At all events, one can go to the nearest bicycle-repair shop and get a bicycle-wheel, hub and all, probably, for three or four dollars. By making special springs or forks, if they are not suitable on the regular wheelbarrow, the pneumatic-tired wheel can be substituted very easily. In moving crates of comb honey over ground none too smooth, especially crates containing combs attached on only two or three sides, the pneumatic-tired wheelbarrow would be far superior to any other carrier.—ED.]

HIVING BACK SWARMS BY SHAKING.

In your issue of June 15, p. 600, Mr. Hand speaks of hiving back swarms by shaking them off in front of the old hive after they have been hived in another hive for 48 hours. I should like to know if this method will work satisfactorily with first swarms of the season. I notice he speaks of its being July when he tried this plan, rather late in the season, and possibly the bees had swarmed earlier in the season, and these were second or after swarms; also, what is done with the queen that is with the swarm that is sent back into the hive? Is she killed or allowed to return with the swarm?

A. T. ZIMMERMAN.

Washta, Ia., June 25.

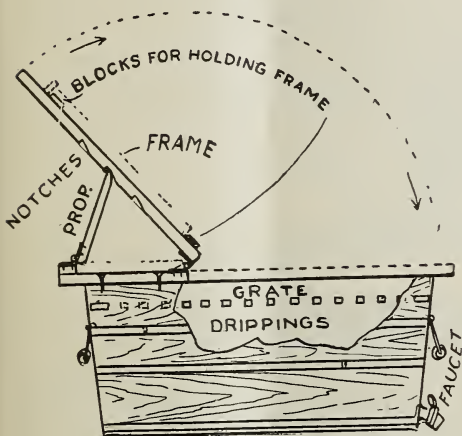
[This was forwarded to Mr. Hand, who replies:]

Replying to the above inquiry, will say the swarms mentioned were first swarms, and the queens were allowed to run in with the bees—simply hive the swarm by the side of the parent colony, and after 48 hours shake the bees out of the new hive in front of the parent hive from which they first issued. Swarms so treated will stay a week or more, and work equal to a first swarm. I do not claim this as a sure prevention of increase in all locations, but especially recommend it for swarms that issue late in the season, leaving partly filled sections on the parent colony which could not be used on the new hive. I am using a modification of this system the present season, with splendid success. J. E. HAND.

Birmingham, O.

ANOTHER TUB FOR UNCAPPING; HOW TO MAKE, ETC.

Ever since I saw and read about the Starkey uncapping-frame holder, Jan. 15, I have been thinking of giving you a description of the one that I use, for I think it beats any other that I have ever seen. To make it, take a common new wash-tub; put a faucet in near the bottom to draw off the drippings. Make a frame of slats about one inch by half an inch thick, the cross-pieces about one inch thick so as to give at least an inch of space for honey that has dripped through. The frame is for cap-



plings to fall on to. Next get one wide board that will cover more than half the top of the tub, then a narrower one. Cut them round and large enough so that the two side by side will more than cover the top of the tub. Screw the narrowest one on to the top of the tub; call that the back side of the tub, for you want your faucet in the front. Attach the wide top board to the other top board, where the two boards come together, with hinges. Take another hinge and attach a short stick to the top of the back top board. Make notches in the top of the wide top board for the prop to catch in. When you have a prop just the right length to let the wide board lean back at the right slope to suit you, lay an L frame on the slanting board which is up when laid back against the prop. Now you can see just where to nail or screw on a couple of blocks to hang the frame on. The slanting board serves as a lid to the tub when not in use, and as a rest to hang a frame of honey on when opened back.

When all is ready I take my honey knife in my right hand, start at the top right-hand corner; run across to the other end of top bar down across the end; then cut up and down as I come back to where I started, and one side is very nearly all off; the cappings drop on to the grate in the tub, and are draining while I am working. Then I draw off a bucket occasionally from

the tub; and when the tub gets full of cappings I have a large barrel handy that is coated on the inside with paraffine. Into this I dump the cappings until I have spare time to render the wax out. You can tell what size of tub you want by measuring with the frame that you want to use, so that all the drippings will fall into the tub. Of course, when one side is uncapped the frame has to be turned over; but I would rather do that than to have something that I would have to hold on to with my left hand all the time. J. M. WOODHOUSE.

Durango, Iowa, March 28.

BROOD-FRAMES WITH THINNER TOP-BARS. THE MATING OF QUEENS; ARE THEY FOLLOWED BY SWARMS OF DRONES?

If you can make brood-frames as mentioned in your footnote to Mr. S. T. Pettit's article, p. 645, by all means let's have them. I, for one, do not like the $\frac{7}{8}$ square top-bar. A bar $\frac{1}{2}$ inch thick will never sag; then they are lighter, and ought to be cheaper, and perhaps freight would be a little less, all of which counts. I should like a little information. I find (through bee literature) that there is an idea among bee-keepers that a whole crowd of drones gets after a queen when she takes her wedding flight. Why is this? I had always supposed she mated with the first one she happened to meet. If there is a race after her, the drones from black bees must be decidedly swifter than those from the Italians, judging from the number of mismated queens we have.

My bees are doing the best this year of any since I have been keeping them. Some have almost finished their second super, and cotton is just beginning to yield. Never before have I got any thing only from cotton. L. C. ROUSSEAU.

Waxahachie, Tex., July 12.

[There have been many reports to show that drones fly in schools during the middle of the day. When a queen sallies forth they are attracted at once, and then there is a race—the survival of the fittest—with the result that the strongest is the successful suitor. But I should question very much whether the black drones were the stronger. There are probably more of them in your vicinity than you suppose, notwithstanding the Italian drones are so plentiful in your yard.—ED.]

DISCOURAGING FOR CANADA.

In Canada the winter has been the most disastrous known to bee keepers during my 24 years of bee-keeping. Almost without exception bees wintered outside came through in a very much weakened condition, and with the death of many stocks. Even those wintered in the cellar did not fare as well as usual, owing to low outside temperature; the cellar temperature was lower. The bees consumed more honey

On the summer stands, owing to the cold

spring and greater amount of stores consumed in winter, many more starved; queenless colonies perished for want of queens unobtainable from the South this year, where queen-breeders were battling with adverse weather. Poorly wintered colonies which, under favorable conditions, might have pulled through, perished. Our own bees came through pretty well, but gathered the first pollen April 30, over a month later than usual. From Nova Scotia, and New Brunswick to Ontario, come reports of small apiaries wiped out—yes, one with 165 colonies set out has only 4 living. In the Anapolis Valley a leading bee-keeper in New Brunswick writes me, "There is scarcely a bee left." Fully 70 per cent of the bees in Canada perished, and four-fifths of these are not in shape for the honey-flow, which, owing to weather, has so far been of such a nature that only strong colonies have done any thing.

Basswood promises well—lots of buds; there has not been much swarming; and at present writing, July 6, and clover nearly over, there is not likely to be much increase, so that, after counting winter losses, there are likely to be no more but fewer bees in the country when the honey season begins, 1905, than at the same time in 1904. Commission houses are already writing out to secure honey before the true condition of things is known.

R. F. HOLTERMANN.

Brantford, Ont., July 6.

MAKING SWARMS DESTROY CELLS.

I see your request in GLEANINGS for June 15, for further information in regard to the claim made by Chas. Dadant, as quoted by Mr. Hand, that swarms returned to the parent hive after 48 hours would destroy queen-cells and swarm no more. I am sorry to say that it can not be relied upon here; but in your northern latitude I think it might. However, I have been using a method that accomplishes the same result, but with a trifle more labor. Briefly stated it is this: I use shallow hives tiered up three and four stories high; and when a swarm comes off I live it in one shallow body, and place an empty body under it, on the old stand. In six days I separate the brood chamber through the center and kill all the cells but one. At the same time I kill the old queen and return the swarm, placing the extra super of newly drawn combs on top if needed; but if not needed I use it on a weaker colony, or to make increase. With a young queen and plenty of room, very few colonies will ever think about swarming again that season.

WHEN TO MAKE BRUSHED SWARMS.

I indorse what Mr. Hand says about Doolittle's advice to make brushed swarms two weeks before the honey-flow begins. Such advice may do for mere dividing, as Mr. Doolittle practices; but for true brushed swarming, never. The flow must be at hand, and wax secretion already started.

I repeat that, in this locality, it is entirely immaterial whether or not cells are started. The thing of most importance is to have a powerful force of bees and a good strong flow on hand, with no waiting. Given these, and brushed swarming will be a full success. Without them it must be a failure, and no amount of other coddling will prevent it. I make these brushed swarms at any time when there is a honey-flow on, and for section honey they are unequalled by any other preparation of a colony for that purpose.

IN FAVOR OF THIN TOP-BARS.

Mr. Pettit's conclusions are identical with my own respecting thin top-bars. As you know, I use $\frac{3}{8}$, and have never wanted them thicker. Burr or brace combs are very unusual in my yards, and I think there are other advantages. The queens pass them more readily in three and four story hives; and as I never try to confine them to a certain part of the hive, this is of much importance to me.

Vigo, Tex.

J. E. CHAMBERS.

ALFALFA IN CUBA; SOMETHING ABOUT TURKEYS.

You say you would be glad to know if alfalfa succeeds in Cuba. Last year I sowed a small patch—a peck of seed, I believe. In three weeks from the sowing it was just 6 inches high, and as fine a stand as could be asked for. Then the turkeys fell on it and it went out of sight. We raised 500, but I am selling them all off as fast as I can, as I will close them all out before sowing more alfalfa. Next time you come to Cuba I hope to show you a patch of alfalfa. I read somewhere that it would do well in any soil that contains lime. In that case Cuba fills the bill.

As you know, our honey season this year has been a failure; with the loss of bees in Cuba and the United States, and the rise in price of sugar, honey ought to bring better prices next year.

C. F. HOCHSTEIN.

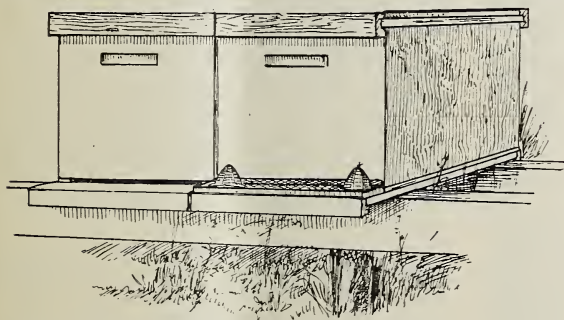
Punta Brava, Cuba, May 20.

[Why, friend H., you have set me in the fever to go to Cuba and raise turkeys. If I understand you, the turkeys will do all the haying and harvesting themselves; and as alfalfa would grow every day in the year in Cuba, and keep on doing so indefinitely, all you need to do is to make a plantation big enough so your flock of turkeys would not eat it too close. The alfalfa would grow, you see, and the turkeys would grow too, and the owner would have nothing to do with the matter of feeding his flock. If I am correct, there is a big market for every thing in the poultry line in Cuba. Now, with that nice little girl of yours to help (or some other woman *equally smart*), it seems to me growing turkeys in Cuba would be about the nicest business in the world. But what is the reason that, in all these years it has been settled, nobody has dis-

covered the possibilities of alfalfa in Cuba? Is it because your ranch on the mountain-side, with that unfailing spring, is an extra choice locality?—A. I. R.]

BEE-ESCAPE FOR STRENGTHENING SWARMS.

I send a picture of a bee-escape which I used last summer. It is a perfect success for the purpose for which I made it. It is 14 inches long by 2 wide by $\frac{3}{8}$ high. Three sides are of wood, $\frac{3}{8} \times \frac{3}{8}$, with the top covered with screen wire. In each end I cut a hole an inch square. I then made a wire one by forming it over the end of a square piece of wood a few inches long, having one end sharpened in the shape of a pyramid.



After making a $\frac{3}{8}$ hole in the apex of the cone, and while it is on the stick, I turn up the four corners so that they will fit on a flat surface. I then fasten it over the hole that I have made in the screen I have made on the frame; then I nail a light strip of wood on top of the screen that goes next to the hive. I then put two small sharp nails through the frame so that I can press them into the alighting-board far enough to hold the escape in place.

When I have a swarm I hive it and put it on the stand by the side of the hive it came from, and so close that the two hives touch. I then put the escape in front of the hive from which they came, and in so doing every bee that is old enough to work in the field will come out; and when they come back they will go into the new swarm, thereby getting the entire working force into the new hive.

The first day after hiving I transfer the comb-honey super, which is partially filled, to the new hive, and let the old hive without any super stand in its place from three to five days, when I take it to a new locality. All of the bees in it are young, and will not be lost by their removal. The results are, there is no need of cutting queen-cells, for the queens will fight it out among themselves on the sixth or seventh day. There are no after-swarms. The super partly filled is filled in less time, and better, than if left on the old hive. Before I tried it I was afraid so many bees would come out that they would leave the colony so weak they could not keep the brood warm; but I

have had no trouble in that line. With the swarm-catcher that I have previously described and used in connection with the escape, I see no need of clipping the queen's wings or cutting out queen-cells. I intended to experiment with the escape this season by putting the old hive on top of the new swarm the fifth day, with some of the queen-cells cut and some uncut, leaving it 21 days, or until the bees were all unhatched, and then extracting it. In that way the bees would have accomplished their desire to swarm; would be in a better working mood after swarming, and would have the entire force of the colony. That was my idea of preventing increase, and at the same time not discourage the bees by preventing them from swarming.

But I am prevented from carrying out the experiment by the adverse conditions prevailing in this section of California on account of an extremely light rainfall. This is the time of year we should be in the midst of our first honey-flow; but instead there are hundreds (and I believe thousands) of full colonies starving at the present time. I have just fed mine 400 lbs. of sugar, so I shall be very much interested if some one would take up the experiment of keeping down the increase in the way I have mentioned, and report his success or failure. J. M. MACK.
San Diego, Cal.

A FINE QUEEN TRADE BROKEN UP BY FOUL BROOD.

It will, perhaps, interest you to know that foul brood has broken out in my home yard to such an extent that it would be ruinous to me and dangerous to customers, in my opinion, to continue queen-rearing on a commercial scale. One week ago all stocks were considered sound. The "genuine article" has been found in five colonies and one nucleus, and it is confidently expected in others. The contagion must have come from nearly three miles away, possibly six miles, as there are no bees closer than the former lot. Of course, that means extra work in the honey-producing yards, which means something to a man who is not strong. But I have met many difficulties which have scared me worse. An entire change of management will, of course, be necessary.

While surrendering the queen-trade it is with the belief that I held it down longer than any one else who ever advertised queens on the Pacific coast. Many pleasant acquaintances have been formed and older ones strengthened, which makes life brighter and broader. The value of good queens has never appeared with more force to me than now, and I feel able to compete with any one in producing a superior grade. The last three or four years have been of

much educational value to me. All queens will now be clipped as soon as they are found laying, and no one will have reason to object.

Perhaps you would be pleased to know about our season's honey crop. So should we. Nearly all of my honey last year was stored in August, September, and October. Modesto, Cal. W. A. H. GILSTRAP.

MILK PAINT ALABASTINE NOT SUITABLE.

Referring to query on page 608, June 15, concerning alabastine as a hive paint, I used some and was sorry I did. Perhaps I got the indoor kind. I shall try next time a "milk paint" given in April *World's Work*, quoted from *Scientific American*; viz., 1 gallon skim or butter milk (whole milk is better), to 3 pounds Portland cement. Color to suit. Keep well stirred while applying, and use on day of mixing. The alabastine I used peeled off like whitewash. C. G. DICKSON.

Kensington, Md., July 7.

SHOOK SWARMING; REDUCING THE LABOR OF HUNTING FOR CELLS.

In working outyards on the shook swarm plan, the big item of labor is going through each hive every week to look for queen-cells. This labor may be greatly reduced by placing a comb in the center of the brood nest, said comb having an opening in its center formed by means of two pieces, $\frac{7}{8} \times \frac{1}{8} \times 6$, spaced $\frac{3}{8}$ or $\frac{1}{2}$ inch apart by being tacked to blocks of that thickness. This little frame is inserted in the comb horizontally, and the top bar of the frame is painted red, or otherwise marked. On opening a hive, draw out this comb. If no cells appear in this opening, there are none in this hive. All other combs must be perfect (not contain openings), and it is better if they are built solid to the bottom-bar by having been inverted.

I have in mind a plan by which the operator may detect the presence of cells in these spaces by means of a mirror thrust into the deep entrance. Of course, the mirror is preceded by smoke.

THE NEW ALIGHTING-BOARD.

Your new alighting-board and entrance-regulator is open to the serious objection that, as the bottom board swells, it pushes the block away from the hive, thus opening the entrance when we do not want it open. This may be remedied by cutting the stick which closes the entrance shorter, so it will just slip in between the rails, and nailing it closer to the edge of the alighting-board. GEORGE DEMUTH.

Peru, Ind., July 2.

BEE-STING POISON AN ARTICLE OF COMMERCE.

Can you tell me any thing concerning the formic acid which is said to be collected by bottling bees, agitating them and killing them with alcohol? This product is said to be sold to eastern druggists at a good price. I should like to get the names of such purchasers. This bee-sting business looks to me like a hoax, as I have been personally acquainted with parties who have been stung many times, and still have the rheumatism; but as all such fads have a day it may answer to sell. W. W. RICH.

Clements, Kan., July 3.

[The active principle of the bee-sting poison, whatever that may be, said to be formic acid, is used largely by the homeopathic school of medicines. Some years ago we used to do quite a little business pulling bee-stings by the thousand. We have supplied Boerick & Taffell, of New York, with stings in lots of ten thousand, the same being dipped in a small vial of sugar of milk as fast as the stings were removed. At other times we have taken bees in lots of five or ten pounds, shaken them up until they became thoroughly angry, and then immediately dumped them into a large vial of alcohol. But because the pulling of the stings poisoned the operator pulling them, causing a swelling of the face, we refused to accept further orders of the kind.]

We have had some reports, apparently showing quite remarkable cures where one was suffering from rheumatism after he had



been stung in the affected parts. We have had a good many other reports from those who have tested the stings and could see no benefit whatever. See Pickings.—ED.]

WORKING COLONIES FOR BOTH COMB AND EXTRACTED HONEY.

On page 586, Brown inquires of Doolittle the best manner of working his 50 colonies for both comb and extracted honey. He gives a very good plan for doing so; but for this locality, at least, I have a way that I like much better. My plan is, to commence extracting from the upper super as soon as or a little before the bees have filled it in the spring, and keep extracting until the swarming furore is about over. By thus extracting it will greatly retard but not entirely stop swarming. Perhaps three or four out of ten will swarm—not more. By this time those that have not swarmed will be powerful. Now lift up the upper extracting-super, and put a complete super in its place. On the top of the super put a Porter bee-escape board, and set the extracting-super on that; and if the weather is favorable for honey-gathering it will be surprising how soon they will fill not only one but perhaps two or three supers. In this way one can have a small increase, and also a crop of both extracted and comb honey. JOEL HILTON.

Los Alamos, Calif., July 8.

A SWARM THAT WON'T STAY HIVED.

I had a swarm come out of a hive twice in one day. They returned both times to the old hive, and they came out again and were hived. They stayed two days, and swarmed out. I hived them again, and put up an entrance-guard of zinc. They swarmed out and left. Can you tell me how the queen got through the guard?

ALBERT BAKER.

Hartmansville, W. Va., June 18.

[A colony that has attempted to swarm, and goes back, will try it again; and if they fail to take the queen with them they will possibly kill her. A colony that acts this way should be hived in another location, or divided; or, better still, shaken on to frames of foundation on the old stand. I can not explain how the queen got through the zinc unless she was a small one. In rare cases queens will pass perforated zinc.—ED.]

PICKLED BROOD; ITS CAUSE.

This disease generally makes its appearance at the beginning of white-clover bloom, and sometimes makes a general attack on an apiary as if by some magic power. In its infancy you will occasionally notice brood scattered perhaps on several frames with no cappings, which does not seem to have energy enough to spin its inclosure. In course of a few days the larvæ will turn a light brown, beginning at the head, very water-like; later turning dark and dry until at last the whole will drop from the cell if you turn the frame side

downward. In a more severe attack, cappings with pinholes contain dead larvæ of like nature.

During the past four weeks we have had heavy rains followed by cool nights, the thermometer registering in some instances below 60, causing nectar to flow very thin, the bees requiring more time than usual to seal honey.

Some writers state that, when there is plenty of unsealed honey in a hive, the disease will not make its appearance. This I can not exactly verify, as in my experience I have found it in colonies (queen having access to the upper story) having upward of 40 lbs. of unsealed honey. If cool nights and rainy weather have a tendency to bring on the disease, does not this thin nectar gathered during cool and wet weather help to increase its progress if fed to larvæ? Careful observation may enlighten us more on this subject. A. J. HALTER.

Akron, O., July 11.

[A good many samples of brood like that described above have been sent us this season, and we had had reports of it from various quarters. I have seen it other seasons, but there has been very much more of it this year than usual, and I therefore conclude it must be a product of the season—the damp weather resulting in poorly fed larvæ, which, from lack of proper nourishment, die, and subsequently turn brown. Whether this is pickled brood or not I can not say. Mr. Halter came here in person, and submitted a comb. It looked like pickled brood. If that disease is caused by conditions present last spring and early summer, then we can account for much of it this season.—ED.]

LARGE OR SMALL COLONIES—WHICH?

Comment on Doolittle theory that a stock of, say, 20,000 bees is better than two lots of 10,000 each joined to make one lot. The reason they are better is because the stock of 20,000 began to breed early, therefore there are 10,000 nurses in that stock; whereas the two 10,000 lots when joined will not muster above 5000 nurses. It's the nurses that count in the spring.

Long Eaton, Eng.

J. GRAY.

[I do not think there can be any question that the larger colony is more profitable as a rule.—ED.]

WHY IT PAYS TO KEEP POSTED.

In one of Doolittle's chats I saw an item that saved me just one dollar, and GLEANINGS gets it.

I am troubled beyond endurance by the wax-moth. The season here is so long for them that they will ruin me if I can not find a preventive.

Mrs. LOLA L. CLEMONS.

Hamilton, Va.

[There will be no trouble from wax-moths if you have pure Italian blood in your bees; and they do not need to be pure Italians either.—ED.]



Whosoever will be great among you, let him be your minister; and whosoever will be chief among you, let him be your servant.—MATT. 20:26, 27.

Some of the friends may think I quote a good deal from the *Sunday School Times*, and no doubt the *Times* is sometimes in error. Its editors would not be human if they never made a mistake, or perhaps we might say get a mistaken idea of the Scriptures. But, taking it all in all, I do believe the *Times* occupies about as high a place in spiritual matters as any other periodical in the world. I have before referred to the care which they take in regard to their advertising pages; and I am led to believe they exercise a still greater care over the reading. An editorial in their issue for July 2 has almost startled me with the vividness with which they portray one of the grandest truths of the Bible. In floral decorations and displays we make certain plants more vivid and more beautiful in their coloring by sharp contrasts. Close by that greenhouse I pictured to you in the last issue there is a little bed that in the spring was covered by a single sash. It is only 3 X 6 feet. Fronting the road there are three plants of golden-bedder coleus, one of the brightest strains I ever got hold of. Just back of these three plants, and almost surrounding them, are some deep-purple (almost black) plants of the *Achyranthus lindeni*, and up over all is a gorgeous display of petunias, both single and double. Now, the coleus is brighter and more beautiful because of the strong contrast to its golden hues presented by the side of the glittering achyranthus that makes one think of ripe cherries—cherries that are so red they are almost black. And then the beautiful variegated blossoms of the petunias with the coleus and achyranthus to fill up and support them, as it were, make such a little spot of beauty that I am almost startled, a dozen times a day, when I look upon it suddenly. When I get up in the morning, after a July shower, I feel like saying to myself, "Did you ever see any thing so beautiful?" May God be praised for these glimpses of beauty.

Now, the words of Jesus, the Savior of the world, that I have placed at the beginning of this talk, were made to stand out sharp and clear as I never saw the text shine before by a little editorial in the *Sunday School Times*. Here is the editorial:

Names are often used thoughtlessly, and an institution should not be condemned because of its unfortunate name. But it is worth while to note the wrong direction that is given to young people's life courses by the use of a phrase often heard. A current magazine describes a certain "School of Self-culture." There is no such thing as "self-culture" in the sense in which the framers of that title would like to be understood. Self-culture is suicide, but they would not

fancy that paraphrase. "How can I do most for self?" is the tacit question that mars many a life. "How can I best improve myself?"—and the questioner applies to a school of self-culture, instead of asking "How can I best prepare to be of service in the world?" Equipment of self for unsparring service is a proper pursuit. A course of training in order to spend self is likely to amount to something. Self-culture—never! Imagine the Nazarene saying: "Whosoever would be great among you shall—cultivate himself!"

Yes, it is indeed true that this whole wide world, even our schools and colleges, our great lecturers, and perhaps some of our great teachers, are urging *self-culture*. We are taught over and over again to "do with our might what our hands find to do," and to "improve each shining hour;" to be *busy* at something, and to take care that the work of every hour shall leave a substantial record of some sort. Even our religious papers are advising people to take *care of themselves*. Our great doctors are showing us how to *take care* of our bodies that God has given us, so as to prolong life. But the largest part of it seems to be from a *selfish standpoint*. When I got to the end of that editorial and read the words, "Whosoever shall be great among you shall—*cultivate himself*," I was startled. Did Jesus ever have such a thought in mind? Not at all. He said, whosoever will be great among his fellows shall take upon himself the office of a servant; he must be servant to the people, serving the people. His end and aim should *not* be self, but the general good of his fellow-man.

We have heard stories of kings in olden times who disguised themselves and went about as a common person might. They did this in order to find out better about the abuses and injustice among their subjects, especially on the part of the rulers. We are not told they preserved their incognito very long; but I am glad we have records that some one in authority has done it, even for a little while. Ours is a country of patriotism. We are patriotic as a nation; but how in our days shall this patriotism be applied to the thought that Jesus teaches in our text? Men have given their lives for their country, and their names have been handed down to posterity. They have died that their fellows might have life and liberty. Just now we are needing patriots who are willing to *live* as well as *die* that humanity may be relieved of some of its useless and unfair burdens. When we think of the revelations that have been recently made of the strifes that are going on to get hold of the money that belongs to the common people—the tax-payers—how it makes us feel the need of men who not only *love* but *live* Jesus' words! of some who are anxious to be *servants* instead of being lords and living in luxury!

In another part of that same issue of the *Times* there is another editorial containing the following:

There is an Old Testament story from which it is perhaps not unfair to draw an illustration of this principle. When the children of Israel set out from Sinai, Moses endeavored to induce Hobab, the son of Reuel the Midianite, Moses' father-in-law, to go with

them. As an inducement, Moses promised him that it would be to his profit to come. "I will not go," said Hobab, "I will go home." Then Moses urged that they needed him as a guide through the wilderness into which they were going. And Hobab changed his mind and went. Some men want wages for their work; others want work for their wages.

The words that surprised and startled me in this are the following: "Some men want wages for their work: others want work for their wages." In my experience in employing men, women, and children, I have found *hundreds* who want wages. They want *better* wages. They are constantly inquiring of their employers if they, the employers, do not think they are worth a little *more* money than they are getting; and if somebody offers just a few cents an hour more, we have got to pay it or let them go. Sometimes they do not even tell us they have had a better offer. They jump at this offer for a cent or two more an hour, and drop their work without even explaining to their employer, or their successor, so that somebody else may pick up the broken stitches without injustice to customers, and financial loss. These people are working for *wages*, and this matter of wages seems to be the sole inspiring motive for their work. Thank God, however, this is not altogether the rule. Some bright memories come to me as I dictate, of those who have in years past come to me with something like this: "Mr. Root, I am more obliged to you than I can express for having advanced my pay, especially when I did not expect it; and what troubles me now is that you are offering me more than I can earn. Now, if there is any way that you can suggest whereby I can be of more service to you than I have been heretofore, in order that I may keep this advance you offer, *with a clear conscience*, I shall be very glad to know how to do it."

Oh what a pleasant feeling there is on both sides when dealing with such persons! This last dear brother or sister, for I can with a clear conscience call them by such endearing names, wanted *work* for the wages given. They wanted *more* work. Does it occur to you, dear friends, that this class of people have in their minds something like the texts we are considering? They want to serve the world, and are more concerned about making their service good, and worth a hundred cents on the dollar, than they are about studying day and night to see how they can get still better wages without a particle more of service. While I am about it, let me say that, as memory goes back, I find that every one who had the feeling that he was getting more pay than he really earned, and therefore was constantly striving to do more for his employer—such people have always "forged ahead." The great greedy world, if you will excuse me for speaking in that way, of the average world, is looking for just such people. It grabs for them; but, thank God, such persons do not hasten to leave their old employer, even if somebody else does offer more pay. There is a sense

of fairness and justice in their makeup that forbids any thing of the kind.

This last editorial I have quoted was from an article discussing whether ministers should go somewhere else when a larger salary is offered. When it seems plain that a minister can do more good to humanity by going to a larger field he ought to be willing to go; and his people, no matter how much they love him, should be glad to have him go. Both pastor and people should forget self, and think rather of humanity.

We have recently been discussing the advertisements in the different periodicals in our land. Mr. Bok has called our attention to the class of advertisements found in our religious papers. Now, advertisers as well as editors, if they have any glimpse at all of the character and spirit of the Lord Jesus Christ, would consider *first* how they might benefit humanity; and, secondly, the matter of fixing a fair price for their services. The object-lesson we have been taught by Duffy's malt whisky comes in here in contrast with Jesus' words in our text in a way to make those words precious. The whisky men evidently have no conception of bettering humanity; indeed, I do not believe they have any conception of humanity at all. In their selfishness they have forgotten there is anybody in the world except victims to be plundered by such as they are. They are quite willing to curse humanity, to chain it down with an appetite that will send one to the bottomless pit, just so they get the dollar. They have learned by being among good men—that is, they have been among good men sufficiently to learn that the world generally has some faith in a letter with a man's name signed to it, especially if the writer gives the place of his residence. They take it for granted the average person will believe such a letter to be genuine. In their efforts to gather in the dollars, they seem to have no fear of God or man. We may feel certain, too, they do not fear the *Devil*, perhaps because they are so intimately acquainted with him; therefore they perpetrate these outrageous and baneful falsehoods, and secure space to print them in periodicals that are generally supposed to be reliable.

We have been treated to some magazine articles in regard to the shame and corruption in some of our great cities; but this same shame and corruption, it seems, is not confined to the great cities. Society is all honeycombed with it. For many years we as a nation have been prosperous. Everybody is busy. Almost everybody has means; and I fear we have been too busy to look up and point out the wolves in sheep's clothing. Science, arts, and industries are making great strides. Oh that we might see corresponding strides in the way of godliness and righteousness! that we might see able men in high places who are hungering and thirsting for service instead of hungering and thirsting for the dollars that rightly belong to the honest tax-payer! Oh

that we might see the striking thousands hungering and thirsting for *work* instead of hungering and thirsting for *wages*! Where is our Christianity? where are our churches and our church-members? where are our Sunday-schools and their superintendents? where are the Endeavor societies? Several times I have complained because these organizations do not catch on more closely and intimately with the Antislavery League, W. C. T. U., etc. It has sometimes seemed to me as if our religious organizations were going one road, and the great wide world, especially about this season of the year (this vacation time), were going another road. The Salvation Army, may God be praised, seems to be occupying the middle ground between worldliness and godliness. If there is a dividing fence or wall between the professing Christian and the rest of the world, the Salvation Army is tramping it down. They are making a cross-cut instead of developing roundabout ways—the unwieldy ways we often see the churches adopting.

The editor of the Philadelphia *Farm Journal* is teaching vehemently that automobiles have no business on public roads. This one journal stands almost alone in the position it takes. I have been privately remonstrating with the editor. He declares there should be roads for the automobiles and separate roads for the farmers. But I asked him a question something like this: "Suppose that we who prefer to use the automobile should make better roads, and more direct ones, between the great cities than the world has ever seen before, shall horse-drawn vehicles and pedestrians be kept off from these convenient thoroughfares?" At first he did not reply; but but when I pressed him for an answer he said he would have a tight fence in the middle of this ideal thoroughfare, and keep the common people on one side and the automobiles on the other. Now, I do not agree with him at all. Our new beautiful convenient highways that are going to be constructed in the future are to be for *everybody*, high and low, rich and poor. We are all going to help build them, and then we are all going to use them. We do not *want* any divis on fences. The men who run autos must obey the law, and so must the men who drive horses or go on foot; and these laws must be wisely and judiciously framed—not to favor unduly one class or the other. All who travel on these roads must learn to have only love in their hearts toward all. "Whosoever will be great among you, let him be your servant." The man who owns the automobile should delight to pick up a woman or child and give such person a ride, especially if he is a gentleman of wealth and leisure; and the man who has an humble rig, with perhaps a poor old horse, must not purposely vex and annoy his wealthy neighbor just because of a feeling of bitterness in his heart toward the man of means. I asked the editor of the *Farm Journal* which is better—

to stir up warfare and strife between neighbors, or to have a farm journal of wide circulation endeavor to cultivate friendly and neighborly feelings. The reply was that sometimes war is better than peace. This may be true, under some circumstances—the "Duffys" for instance; but I am sure it is *not* true, and never *will* be true, that it is better to have war over such a simple matter as a difference of opinion in regard to how a man shall travel.

Now, dear friends, my earnest and fervent prayer is that the unexplored regions of happiness and good will that exist along the lines of Jesus' words may be the next great craze that will stir our nation. A great many are prophesying that we shall soon navigate the air with flying-machines; and I begin to have faith that I may live to see the time when such things will be as common as automobiles are now. Instead of spending so much money in making roads on which to travel, we shall just skim right over the mud-holes and the ruts, and travel on air. After we get so we can skim over these things I have mentioned, say a foot or two, then we may be able to get above the fences, buildings, and possibly the forests. Will it not be glorious when you can take your wife out for an evening ride, and sail clear above the din, turmoil, and strife? Yes, all of these things will be grand; but, dearly beloved (and I have in mind those who have been reading my Home papers for years past), this thing of flying through the air would be as nothing compared with seeing humanity with a *great revival*—say a great craze or hobby for rich and poor, old and young, to outdo each other in *serving* their fellow-men, and in cultivating honesty, truth, unselfishness, and neighborly love one for another—such a love as the dear Master showed when he loved *even his enemies*, and prayed with his dying breath, "Father, forgive them, for they know not what they do."

THAT AUTOMOBILE AT THE PRESENT DATE.

With the present good roads it is doing more service than ever before. It runs errands, delivers goods, saves steps, and saves money in a dozen different ways, just because it is always ready to start at a moment's notice; and it will start, too, almost with a jump if you want it to. It is never tired, and it is never weary; and although it has been in almost constant use for over a year, no one who is accustomed to handling it seems to complain when called on to use it. From the grandpa (your humble servant) clear down to the grandchildren they all like the fun of running the auto. Sometimes somebody says, "Would Mr. Root mind taking his auto and going to so and so's?" Mrs. Root always replies, "Why, he is always delighted to have some opportunity of using his pet." Now, this word "pet" reminds me that, a year ago, I mentioned at length the wonder-

ful fact that the automobile copies more nearly animal life than any thing else the world has yet produced, and it is the same way still. Why, not only have I an affection for the auto, but it really *seems* as if the auto loves me, and delights in doing its very best whenever I have hold of the "reins." Beginners yank on the bits, and talk to it in a way that it is not used to, and it gets balky and contrary, just like a horse. Some of the younger ones will complain that it acts so and so; but I reply, "Why, I have just been running it, and I supposed every thing was in beautiful order." So I spring into the seat, grasp the levers, and, sure enough, it is just as obedient and docile to the touch as one could wish. You see I am acquainted with the auto, and the auto is acquainted with me, just exactly as a horse knows its master, and knows the master has genuine love in his heart for that particular animal.

Of course, with the tremendous service the machine is doing there is more or less wearing out and giving way. During the past ten days it has consumed about 12 gallons of gasoline; and 25 miles to the gallon, the general estimate with fair roads, would make 300 miles. I suppose almost any buggy would show some wear and tear after covering that distance; and to do such work as this, somebody must keep careful watch of the oiling, of the bolts, and every thing else where there is wear and tear. The machine is made for two persons; but in going to church and other places we put on the back seat and carry four and sometimes five; and this double load, or a little more, is always much more trying to the machine than where it carries only two, or, perhaps a little better still, only one.

The machines the Olds Co. is making for 1904 have been very much strengthened and improved—so much so that I talked with the agent of that company about an exchange; but he said there are so many second-hand machines on the market now he could not see his way to allow me more than \$300 for my old one. This would mean \$350 more to get the latest up-to-date machine. That would make, say, 10 cents a mile providing my machine has run 3500 miles during the past year, besides the repairs and gasoline. Well, I have decided not to trade. The old one is lighter than the new one, makes less noise, and I presume it can be run at less expense for fuel than the new one, so that I have decided not to change. We have now only \$300 invested in the auto—no more than many people put into a carriage and span of horses. Of course, some repairs may be needed as the different parts wear out, but nothing like \$350 a year nor even any considerable fraction of that amount. We have all—father, children, and grandchildren—learned to be so familiar with the machine we know the instant any thing is going wrong. There is an electric light in the auto-house, so we can go all over it

evenings and see that every thing about it is in apple pie order. I have told you that in gardening, if you want a plant to grow you must love it, look at it daily, and study its wants and needs. If you want a horse to do his best, or a cow, you must love the animal and get intimately acquainted with its likes and dislikes and its wants. It is just the same with the auto. Even though it is greasy, and may be the women-folks would say "nasty" to handle, your love for it must be so you do not mind that. For the dear wife's sake, if none other, have some overalls and oversleeves to put on when you have to get down into the machine or under it. Learn how to use the gasoline with the greatest economy, likewise the lubricating oil. Of late we have made a great saving by using what is called non-fluid oil—an oil so thick that it will not run and drop on the ground even during very warm weather. This is put into the bearings with an oil-gun furnished by the oil-dealers. With this little implement the oil is put just where you want it—just enough and no more, without daubing every thing with grease and without oiling the road wherever you go.

I would not advise anybody to purchase an auto unless he is prepared to look after the machine personally. If you run it you should make the repairs unless there is something that absolutely demands the services of a machinist. You should look it all over during rainy days or evenings. If you depend on hired help you will have to pay a big price for a competent man, and he will hardly then be likely to take the interest in it that you do yourself. With a machine that goes into science and mechanics as this does, it can not but be a great educator. You must study up on chemistry, mechanics, good roads, weather, lubrication, and so many other things, that, when you become an expert, you will have acquired quite a general education and a most valuable education for all the business of life.

There are toward a dozen automobile periodicals. Of these I would recommend especially the *Horseless Age*.

The whole scientific and mechanical world just now is working for short cuts, and how to improve and make more useful this wonderful gift to the children of this age from the great Father above. Let me give you an illustration of a discovery of mine. Very likely it is not new.

The machine when it came from the factory was furnished with a set of eight dry batteries to furnish a spark for igniting the gases. Now, these dry batteries are more or less uncertain. The first set lasted about four months. Of a second set made by the same firm some began to fail in one month; and I paid about \$10 for a storage battery to take the place of the dry cells. This was heavier than the latter, and proved to be still more uncertain; so I dropped it and purchased eight more dry cells at a cost of 18 cts. each. Four of these ran

the machine when new. When they become partially used up the whole eight can be made into a series to do the work. Now, these dry cells, even when made honestly, do not hold out alike. Some may play out in one month, while some of the rest may last six months. We are using some that have been used more than that time. Some time in June I bought what is called a battery-tester, for 75 cts. This indicates the power of each cell; and by throwing out the weak cells as the current runs low I have used the greater part of them since about the first of January. And now comes the great advantage of this plan. If you use the whole eight until they are worn out, or till some of them are worn out, or use the storage battery, you will have to carry around an extra set or an extra storage battery for fear they will give out when you are away from home. With my plan of replacing one at a time, one or two single cells in your tool-box will enable you to go away from home a hundred miles or more with very little to carry. You carry these extra dry cells just as you carry an inner tube for the rubber wheels.

By the way, our rubber tires have done excellent service since Jan. 1, without any expense for repairs; and one reason for this is that I have also learned how to handle rubber tires. It pays to be exceedingly careful about where you run your machine. Do not go through grass or rubbish where there may be concealed boards with nails sticking up, pieces of wire, broken glass, etc. Look out for a bit of loose board in the road. Do not run over it. A nail may be sticking out of it. Keep away from sharp stones.

In summing up I would say our machine as it is now, valued at \$300 or \$400, is cheaper than a horse and buggy.* In summer it always stands at the door in front of the factory; and we are all careful to see that it is always in order for an instant start. Of course, nights and rainy days it stands in the auto house. Right close to it is a work-bench with a good assortment of tools for all necessary repairs. Under this bench is the gasoline, three kinds of lubricating oil (hard and soft), some waste for cleaning up, and an assortment of pieces of woolen cloth to wipe off the machine as well as your fingers, and every thing that may be possibly needed to keep it in order. It may not be exactly a "thing of beauty," after having run so many thousand miles the first year, and it may not be *exactly* a "joy forever;" but it comes pretty near being so to your old friend A. I. R.

* On the preceding page I said if the machine had deteriorated \$350 in value in one year, that deterioration would represent about 10 cents a mile. But this is not the case. The agent who sold me the machine said I ought to get \$500 for it. This would be only \$150 for one year's use. And still again, it has almost always carried two persons, and a good deal of the time three and four. Now, the machine may not sell for as much as it has cost, but it may be worth to the purchaser nearly the original price, for in several places we made repairs, curing defects, and improving on the original make. But suppose we say \$150



"CHERRIES ARE RIPE."

May be the early ones will be ripe and gone when this comes to your eye; but our new and improved cherries have such a long period of ripening, that, if you have not got ripe cherries and had them since strawberry time, it is because you are not up to date. Mr. Calvert and I recently visited friend Hilbert's cherry orchard of 400 trees. He has all of the standard varieties, and some others by way of experiment. I can not remember the names of all of them, but I was especially pleased with the May Duke. It is not only exceedingly interesting, but it is very satisfying to any lover of fruit to go through a cherry-orchard and test the different kinds. Very many times I would say, "Don't go any further, Mr. Hilbert. These exactly hit the spot. I do not want any thing better." But he would say, "Oh! don't you be in a hurry. Wait till you have seen some of the others, and then give your verdict."

Why, it was a happy surprise to me to find there so many exceedingly nice early cherries. As we had a walk of three or four miles before us I ate just all I wanted, as I used to do when I was a boy, and no bad effect followed whatever; and that is one reason why I especially love that region around Grand Traverse Bay; for while I am up there in the open air I eat fruit indiscriminately, without any trouble at all.

Now, the principal thing I wanted to write about is this: Some years ago friend Hilbert tried grafting our best early cherries on the wild cherry of the woods, fence-corners, and fields. There are more wild-cherry trees around Grand Traverse Bay than I ever saw anywhere else. My woods is full of them; and whenever the other timber is cut out, the peculiar kind of wild cherry of that region springs up with wonderful alacrity. It starts up every little while where we have cleared the ground for potatoes, and in just a few weeks it will shoot up as high as your head. Now, I do not know how much has been done in the way of using this native wild cherry to bud or graft on to; but it is so very hardy, and of such rapid growth, that it seems there must be wonderful possibilities open in this direction. Perhaps some of our readers who have nurseries can tell us about it. Mr. Hilbert's trees grafted in this way

depreciation in running 3000 miles. This would be 5 cents a mile for the *load*; and if the average load was between two and three people, the actual cost would not be over 2 cents a mile, while three of us (if not four) were learning the trade of running it. To this must be added the cost of gasoline, lubricating oil, and repairs. Had the machine been housed up except in good weather, and not run all winter long during almost all kinds of roads, it would, of course, be in much better condition than it is now.

made a wonderful growth, and they are models of luxuriance. The fruit is the finest I ever tasted in my life. The cherry industry is by no means a new thing around Grand Traverse; but I do not know how far the experiment has been carried of using the native wild cherry for a stock to graft or bud on. I thought once of grafting my cherry-trees in the woods; but I suppose we probably would not get *nice* fruit without giving the trees the usual amount of room, cultivation, and care.

BIRDS, BERRIES, AND CHERRIES.

While over at Mr. Calvert's I saw an early cherry-tree covered with a mosquito-bar bee-tent. He explained that the birds were getting the cherries before they were really ripe. It was a new variety, and they were anxious to test some that were fully mature, besides wanting their share of the ripe cherries. The mosquito-bar tent did the business to perfection, and it cost, cloth, only about 60 cts. Just about that time we had a single Juneberry-bush that was perhaps four feet across, and just loaded with beautiful fruit. I went out one morning and picked perhaps a teacupful of the finest ripe ones, and thought I had never done the Juneberry justice. It seems the birds had not yet discovered them; but within 24 hours they caught on to the fact that Juneberries were getting good. I waited day after day until I began to think the birds would have the whole crop as they had been in the habit of doing for years past, when I remembered the mosquito-bar over the cherry-tree. Then I noticed over at the apiary a wire-cloth bee-tent that had not been used, as there are no robbers when basswood is in bloom. We set it over the Juneberry-bush about July 4th. Now, it not only kept the birds away but I should not wonder if quite a few youngsters found that wire-cloth house a little inconvenient. It was almost too heavy for them to lift up handily. Well, to-day, July 14, we picked several quarts of Juneberries that far surpassed anything I ever saw in my life before, and yet I have eaten the fruit almost every year since childhood. Under the influence of plenty of rain and perfect protection from birds they grew to almost the size of cherries—small ones, I mean—and the matured fruit was so much superior to the berries generally picked before the birds get them that I uttered an exclamation of surprise.

Now, here is a big discovery. It is a *big* thing, even if it is not a *new* thing. Mosquito-bar bags or tents big enough to cover a Juneberry-bush would not be very expensive; and the amount of fruit saved in a single season would, I am sure, more than pay the expense, and I feel certain that many people never tasted the improved Juneberries when at their best unless they have kept the birds off by some such device as I have described. The bush is a rank strong grower, and has no insect enemies. The bushes are always loaded. I never

saw a failure. The only drawback is the birds, and this trouble is almost universal. By the way, the *birds* generally know a *good thing*. They are rather partial to sweet fruits. The Juneberry is very much like a large luscious huckleberry. They are not very tart, and that is one reason why the birds are always after it. Birds will put up with a sour cherry, dead ripe, providing there are no sweet cherries or berries to be had. Our Juneberries came from Storrs & Harrison, Painesville, O.

One of our readers sends us the following, taken from the *Farm and Home* for May 15:

My experience with black-hearted potatoes is that it takes a quick rank growth of vines to produce black centers, and also that light soils are more liable to produce them than heavy soils—perhaps because the tubers can grow faster in light loose soil. I can take any potato, no matter how prone to black centers, and use a fertilizer that will slowly become available, that is, that will take all summer to do it in, and then, by thorough spraying, which will keep the vines green all summer, and prolong the growth of the tubers to at least three months, raise them without black centers. There were no black centers in my potatoes last year, and I had hundreds that weighed 2 lbs. each or over.

E. A. ROGERS.

Sagadahoc Co., Maine.

We have a lot of those "roasted-chestnut" potatoes growing very nicely so far, and we are watching them with considerable interest to see whether they will all be hollow on our Medina clay as they were on the sandy soil of Northern Michigan.

DUFFY'S MALT WHISKY—MORE ABOUT IT.

From the *New Voice* of June 23 we extract the following additional, illustrative of the cheek this firm has shown in advertising its intoxicant. Our selection is taken from quite a number of similar exposures.

Rev. Edward M. Ellis, of Helena, Mont., wrote to Mr. Quinlan, of Albany, N. Y., whose name had been appropriated by the Duffy people. Mr. Quinlan must have been surprised to find his picture in a quarter-page advertisement with the following testimonial:

I always had tendencies toward lung trouble, and for many years have suffered a great deal with heavy colds and congestion of the lungs; was growing worse daily. My family and friends knew I had so-called incurable consumption, and urged me to go to Hot Springs or to the Northern Woods as a last resort. But I was too weak to travel, and gave up hope.

My doctor finally prescribed Duffy's pure malt whisky, and with the first dose improvement set in and hope revived. I stayed right at home in Albany and kept on taking Duffy's, and in two months my lungs were as sound as a dollar. I had gained twenty pounds, and am to-day in absolutely perfect health. Duffy's saved my life.

WM. T. QUINLAN, 123 Second St., Albany, N. Y.

Please note the above later statement, "In two months my lungs were as sound as a dollar." Think of the sick people whose hopes might be revived by such a startling testimonial. Now read below:

In reply to Mr. Ellis' letter, he says:

Albany, N. Y., March 9, 1904.

MR. ELLIS:—I have never used Duffy's malt whisky.

WM. QUINLAN.

You see Wm. Quinlan never used the Duffy malt whisky at all. One wonders, as he reads it, why these people did not take a fictitious name. I presume they thought it would be better to pretend the testimonial came voluntarily from somebody of established reputation. I wish some legal friend would tell us if there is no law to punish such work.

QUEENS Golden Italian and Leather Colored,

Warranted to give satisfaction, those are the kind reared by **Quirin-the-Queen-Breeder**. We guarantee every queen sent out to please you, or it may be returned inside of 60 days, and another will be sent "gratis." Our business was established in 1888, our stock originated from the best and highest-priced Long-tongued Red-Clover Breeders in the United States. We send out fine queens, and send them promptly. We guarantee safe delivery to any State, continental island, or European Country.

The A. I. Root Co. tells us that our stock is extra fine, while the editor of the *American Bee Journal* says that he has good reports from our stock, from time to time. Dr. J. L. Gandy, of Humboldt, Neb., says that he secured over 400 pounds of honey (mostly comb), from single colonies containing our queens.

Last winter was a severe test on Bees,

But Quirin's Famous Leather-colored Italians

wintered on their summer stands, within a few miles of bleak Lake Erie.

Queens now Ready to go by Return Mail.

Our new circular now ready to mail.

ADDRESS ALL ORDERS TO

Prices after July 1.

	1	6	12
Select	\$ 75	\$ 4.00	\$ 7 00
Tested	1 00	5 00	9 00
Select tested	1 50	8 00	15 00
Breeders	3 00	15 00	
Straight five-band breeders	5 00		
Palestine queens	1 50	8 00	15 00
Two-comb nuclei, no queen	2 25	12 00	22 00
Full colony on eight frames	5 00	25 00	
Four fr's brood, & 4 fr's queen	4 00	22 00	

Special low prices on Queens and Nuclei in 50 and 100 Lots. Nuclei on L. O.enzenbaker frames.

Quirin=the=Queen=Breeder, Bellevue, O.

Victor's Superior Stock

Is recognized as such, to the extent that last season I was compelled to withdraw my ad. to keep from being swamped with orders. THIS SEASON I SHALL, RUN MY

Thirteen Hundred Colonies Exclusively for Bees and Queens

—and will therefore soon be able to—

Have 2000 to 2200

Colonies and Nuclei in Operation

which warrants me in promising prompt service. Untested Queens \$1.00; select untested \$1.25; tested \$1.50; select tested \$2.50; breeders \$4.00 to \$7.00. Illustrated price list free for the asking.

W. O. VICTOR,

Queen Specialist.

Wharton, Tex.

BEES FOR SALE

OVERSTOCKED.

⌚ We have more bees than we can operate, and offer them as follows: Full colony with good young queens at \$5.50 each; twenty or more, \$5.00 each; three-frame nuclei with queens, \$3.00 each; twenty or more, \$2.50 each. Bees are all of the best improved races. The full colonies will be furnished in single story ten-frame Dovetailed hives, and have eight frames of brood, bees, and honey, and two frames of foundation.

CAR LOTS.

⌚ We will furnish bees in car lots as above at \$4.50 per colony.

LOCATIONS.

⌚ Any one wishing to locate in a fine bee country can find suitable locations near here, and we can supply you bees at satisfactory rates. Circulars and full information gladly given. Address

THE HYDE BEE CO.,

FLORESVILLE, TEXAS.